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Clark University Bulletin

The New England Association of Colleges and Secondary Schools accredits schools and colleges in the six New England states. Membership in one of the six regional accrediting associations in the United States indicates that the school or college has been carefully evaluated and found to meet standards agreed upon by qualified educators. Colleges support the efforts of public school and community officials to have their secondary school meet the standards of membership.

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CLARK UNIVERSITY

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THE UNDERGRADUATE COLLEGE

THE UNIVERSITY COLLEGE

The role of Clark University in undergraduate education is defined by its position as a small college dedicated to advanced learning within the context of the University. The University's emphasis upon intellectual and scholarly achievement and the extensive resources of its nationally recognized Graduate School provide unique advantages for the College. The University College concept seeks to integrate graduate and undergraduate education and to translate the high standards of the Graduate School for the University as a whole. The ultimate goal of the University College is to produce an autonomous learner. Programs are structured in such a way that the student will take increasing responsibility for his or her own learning.

In the spring of 1973, the University adopted the concept of the University College as the ideal toward which all undergraduate academic planning and program development should be directed. The College will, in the future, embrace the normal four undergraduate years and result in the B.A. degree or, if the student chooses and is accepted into an integrated undergraduate—graduate program, an M.A. degree. The University College will be composed of two major programs — the *Introductory Program* and the *Program of Advanced Studies* — to be phased in over the next three to five years.

INTRODUCTORY PROGRAM

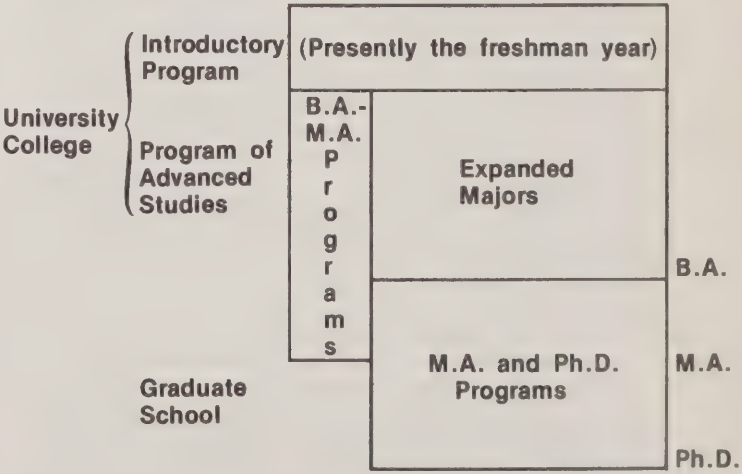
The *Introductory Program* when fully developed will replace the current freshman curriculum. A faculty-student planning committee has been established to develop proposals for the program to be presented to the Clark community during the 1973-74 academic year. The committee is considering such issues as the need for introductory courses to the various departmental and interdepartmental programs, the different backgrounds and needs of individual students, courses which bridge disciplinary perspectives, academic acceleration into the Program of Advanced Studies, the development of specific skills, advisory systems, and means for defining career and educational objectives.

PROGRAM OF ADVANCED STUDIES

The *Program of Advanced Studies* leads to either the B.A. or M.A. degree and is composed of two major tracks. The *expanded major* involves study in the various departmental and interdepartmental programs of the College and results in the B.A. degree. The expanded major is not a departmental major in the traditional sense. Rather, it is a program of study which is anchored in a particular discipline but specifically builds in courses in related disciplines as an integral part of the major. Each major, therefore, becomes more interdisciplinary in design. Ordinarily, multiple tracks within the major will be provided. A student will take from 50 to 80 percent of his studies during the Program of Advanced Studies in the expanded major. This greater focus over the last three years will permit greater depth and sophistication in the student's chosen field of study.

Integrated *undergraduate-graduate programs* will constitute the second track of the Program of Advanced Studies and lead to the M.A. degree. Enrollment in these programs is limited and requires formal admission. This will ordinarily occur at the end of the first year in the Program of Advanced Studies. These programs tend to be interdisciplinary in nature and have a strong career orientation. Over time, a network of such programs will become available to students in the University College.

The structure of the University College may be expressed graphically as follows:



THE ACADEMIC PROGRAMS

DEPARTMENTAL MAJORS

Within the Program of Advanced Studies, a student may major in biology, chemistry, economics, English, Foreign Language (the Foreign Language major is designated: in French, in German, in Spanish, in Romance Languages, or in Foreign Languages according to the program chosen), geography, German, government, history, international relations, mathematics, music, philosophy, physics, psychology, Romance languages, or sociology. A new interdepartmental major in technology and man is also available. A major in fine arts is offered through a cooperative program with the School of the Worcester Art Museum and the Craft Center. A major in theatre art is offered through a coordinate program sponsored by Clark University, Holy Cross College, and Assumption College. Courses in black studies, classics, geology, Jewish studies, Russian, and women's studies are offered, but departmental majors are not available.

INTEGRATED GRADUATE-UNDERGRADUATE PROGRAMS

The University will inaugurate several new integrated undergraduate-graduate programs during the 1973-74 academic year. These programs will ordinarily begin during the junior year and continue for a period of approximately three years, and will result in an M.A. degree. Clark undergraduate students and transfer students both are eligible for these programs and must apply for admission to them. Formal application to the Graduate School will be required after a given period in the program. The newly approved programs are comparative literature, environmental affairs, and international development.

STUDENT-DESIGNED MAJORS

Any student can design his own major which focuses on a systematic body of knowledge not within the bounds of existing majors or departments. The student, with the advice of an advisory committee of three faculty members, will establish the major program which must then be approved by the Undergraduate Academic Board. Such majors must include a balance between upper and lower division courses and must be approved no later than the start of the second semester of the junior year. The senior year includes the satisfactory completion of some specific work (*e.g.,* senior thesis, an internship experience, senior tutorial) intended to integrate courses in the major and to demonstrate accomplishment.

DECLARATION OF THE MAJOR

The central role of the expanded major in the B.A. degree attaches considerable importance to the declaration of the major. A student will declare his intent to major in one or several departments upon entering the Program of Advanced Studies. By the end of the first year in this Program, the student should make a firm declaration of major. Changes in major after this point are possible but may prolong the undergraduate experience. Students are encouraged to seek faculty advice and give careful attention to their future program of study during the Introductory Program.

UNDERGRADUATE PROGRAMS

Freshmen and sophomores may choose any course designated by the department as open to them.

Freshmen and sophomores are admitted to courses designated by numbers beginning with the numeral 2 only with permission of the instructor and the department chairperson concerned, to whom the student must present evidence of high class standing and/or adequate preparation.

Juniors and seniors may elect any courses designated by numbers beginning with 1 or 2, indicating respectively courses which are primarily for undergraduates or for advanced undergraduates and graduate students. The selection by juniors and seniors of these courses is subject to any conditions stated in the course description.

Undergraduates may be admitted to courses designated by numbers beginning with the numeral 3 (indicating courses which are primarily for graduate students) with the approval of the Dean of the Graduate School.

DIRECTED READINGS AND SPECIAL PROJECTS COURSES

Most departments offer directed readings or special projects courses which may be entered with the permission of the instructor concerned. Directed readings courses omprise a sequence of structured readings on a given topic pproved and directly supervised by the instructor. Special rojects courses involve independent research by the student n a particular problem, as in laboratory work or field study. oth types of courses are offered for variable course credit ut not to exceed a full course except by petition to the ollege Board. The number of course credits awarded on the asis of work performed is determined at the end of the ourse. Students may take up to two full course credits in irected Readings, Special Projects or some combination of he two in a given two-module period. There is no limit on the otal number of such courses which may be counted toward he B.A. degree.

THE MODULAR CALENDAR

Clark University had adopted an academic calendar omposed of five seven-week terms beginning in September nd ending in June. The normal academic year for the tudent will involve attendance at four of these five terms, sually Modules I-IV (September-May). Module V may be ubstituted for one of the first four modules should the tudent wish to be away for one of these terms, but the mpact of such a change on the student's program should be arefully assessed. The 1973-74 academic year is a tran-itional year to this calendar and will be composed of a egular semester (September-December) followed by three even-week terms (January-June).

NTERMODULAR READING PERIOD

A two-week period is provided in early January between he first semester and Module III for individual student eading, informal contacts between students and faculty, and ultural enrichment on campus. All experiences are non-redited during this period and students are not required to e in residence.

WORCESTER CONSORTIUM COURSES

Since Clark is a member of the Worcester Consortium for igher Education, students may enroll for one course each nodule at Anna Maria College, Assumption College, Holy ross College, Worcester Polytechnic Institute, Worcester tate College, University of Massachusetts Medical School, nd Becker, Leicester, Quinsigamond and Worcester Junior olleges. Courses at these institutions should not duplicate those taught at Clark and require the approval of the department chairperson or, where necessary, the Associate Dean of the College. Students enrolled in the day college may not enroll independently at other Consortium institutions and receive Clark credit.

NON-TRADITIONAL EXPERIENCES

Academic experiences outside the normal curriculum (*e.g.*, internship experiences, off-campus research, study at non-accredited institutions) are eligible for course credit. To qualify, an experience must involve an extension, embodiment, or illustration in some significant way of previous or concurrent systematic academic work. It must also take place under competent supervision and the learning involved must be formally evaluated by a Clark faculty member. The goals and structure of the experience must be agreed to by the instructor and the student prior to the beginning of the experience. Course credit will not be given for work that duplicates previous course work or other prior educational experiences. Students seeking information on this topic should contact the Associate Dean of the College.

ACADEMIC ACCELERATION

The University encourages academic acceleration for qualified undergraduate students. A student may earn the bachelor's degree in less than four academic years through a combination of Advanced Placement credit, overload course work, attendance in a fifth module during the normal academic year, and participation in Summer Schools. No student may, except with the permission of the College Board, take overload work in his or her first two modules in residence unless the overload is the result of co-recommended or co-required one-quarter or one-half courses (*e.g.*, some science laboratory courses). Students may, after the first two modules in residence, take up to four and one-half courses over a two-module period. Academically qualified students (defined as three out of four courses with a B + or better, and no D's, in all courses taken during the previous two modules) may, with the signature of the student's advisor or department chairperson, be eligible for further overload course work. This policy on overload courses will go into effect, except for those graduating in June, 1974, in January, 1974.

NORMAL PROGRAMS

The undergraduate normally carries a full program of four one-half courses in a given module. In general, a course meets three times weekly for a two-module period. Laboratory periods are usually three hours long. Students should consult their faculty advisor or major department when questions of course or program selection arise.

PARTIAL PROGRAMS

Under special circumstances, students may be permitted by the Deans of Students to register for a two-module program of less than three courses. Such students are designated as part-time students.

ORIENTATION

Freshmen and transfer students attend an orientation program held on the campus for several days before the academic year begins. The intent of this program is to assist students in registering for a program of studies and to familiarize them with the Clark and Worcester communities. Placement examinations will be given and opportunities will be provided for students to attend individual and group meetings with faculty and other students.

ACADEMIC ADVISING

At orientation and during the first year, new students are provided the opportunity to meet in groups and individually with faculty members in order to obtain advice regarding course program and related matters. Each student is encouraged to request a faculty advisor. Toward the end of their freshman year, students are asked to indicate their preference for advisor from the major department, and advising responsibility at that point is assumed primarily by the various academic departments.

ADVANCED PLACEMENT

Placement is advanced courses is determined by individual performance on special departmental placement examinations or, in some instances, on the Advanced Placement and Achievement Tests of the College Entrance Examination Board. Two course credits for certain courses completed in high school will be granted toward the bachelor's degree if a student has received a 4 or 5 on a College Entrance Examination Board Advanced Placement test. Students who received a 3 on an Advanced Placement test may be granted some amount of credit only at the discretion of the appropriated academic department.

REGISTRATION

Every student registers for a specific number of courses at the start of the fall semester and Modules III-IV. A special registration will be held for Module V. Notification of the dates registration occurs is given in advance; failure to register within the announced period occasions a late registration fee.

STUDY ABROAD

All students are encouraged to integrate study abroad programs into their course of studies at Clark. Through the University's affiliation with the Institute of European Studies, campuses in Vienna, Freiburg, Paris, Nantes, Madrid and Durham are readily accessible to Clark students. For further information and to explore the possibilities of a study abroad program for a summer, one semester or an entire year, contact Mr. Schatzberg, Department of Foreign Languages and Literatures.

A foreign study listing is available in the Career Planning and Placement Office. Programs for study abroad must be approved by the College Board.

JEWISH STUDIES PROGRAM

Courses in Jewish Studies are offered at Clark as interdepartmental disciplines and within various departments including the Department of Foreign Languages and Literatures, Department of History, and School of Geography. Independent-nondepartmental courses are also offered and several courses are offered throught the Yeshiva Day Academy of Worcester County. Courses included in the Program are listed under *Jewish Studies* in the catalogue.

HEBREW UNIVERSITY PROGRAM

In 1973, Clark inaugurated a special year abroad program with Hebrew University in Jerusalem. The program includes a seminar or directed study, field research, and training experience. Students enrolling in the program will be required o take the elementary or intermediate Hebrew courses offered at Clark University as part of their program. Clark has lso arranged for a faculty member at Hebrew University to erve as a coordinator for the Clark program. Interested tudents should contact members of the Jewish Studies ommittee for further information.

WASHINGTON SEMESTER PROGRAM

Clark participates in the Washington Semester program f the American University in Washington, D.C. Under the rogram, a small number of superior students may be ominated to attend the program, usually in the junior year, tudying United States government in the nation's capital. lthough any student may be interested in the program, the pportunity should be particularly attractive to students ajoring in government, international relations, history, conomics or sociology. A credit of four courses is given for he program toward the bachelor's degree at Clark. Inquiry nd application should be made to the chairman of the epartment of Government-International Relations.

UMMER SCHOOL COURSES OTHER THAN CLARK'S

Credit toward a degree for study at a summer school ther than the Clark Summer School must be approved by the egistrar no later than registration day of the following emester. Students are strongly advised to confer with the egistrar prior to taking summer school courses to assure cceptability of credit toward the Clark degree.

UEST AND SPECIAL STUDENTS

The University provides for guest students from other olleges and universities who wish to study at Clark for one r two semesters and for special students who wish to take nly a few courses without enrolling as degree candidates. ersons interested should contact the Registrar's Office.

ON-CREDIT AUDIT STATUS

Persons not enrolled as Clark students who wish to audit ourses on a non-credit basis are invited to do so. Approval f the instructor of the course is required. In limited-nrollment or sectioned courses, regularly enrolled Clark tudents are given preference for available openings. egistration is arranged through the Registrar's Office. A fee of $152 per course will be charged.

NOTE: Records for non-matriculating auditors are kept for only the semester in attendance. Transcripts are not issued at the conclusion of the course, nor at a later date.

REQUIREMENTS FOR A BACHELOR'S DEGREE

GENERAL REQUIREMENTS

Course requirements: Credit toward the Bachelor of Arts degree is expressed in terms of courses. A course, normally two modules in duration, involves three class meetings of 50 minutes each and two to three hours of additional work in laboratories or outside preparation, per week. A course may also be offered at double-strength intensity over a one-module period.

RESIDENCE

Normally at least one-half of the total number of courses required for a bachelor's degree, as well as at least one-half of the total number of courses taken for the fulfillment of the major, must be taken at Clark University. Of these, eight of the last 16 courses must be completed at Clark.

TOTAL COURSE REQUIREMENTS

Successful completion of a total of 32 courses is required for the bachelor's degree.

GROUPS

Courses may be obtained at the undergraduate level in the following fields of instruction which, for administrative purposes, are known as "groups."

Group A. Science and Mathematics: Biology, chemistry, experimental psychology, mathematics and physics.

Group B. Social Sciences: Economics, education, geography, government, history, international relations, linguistics, philosophy, psychology and sociology.

Group C. Language and Literature: English, classics, comparative literature, French, German, Hebrew, Italian, Russian and Spanish.

Group D. Fine Arts: Art, music, theatre art and film.

MAJOR REQUIREMENTS

Major: A departmental major consists of from 12 to 19 courses chosen from those designated by the department in the Program of Advanced Studies. No department may require a student to take more than 19 courses in the expanded major, but a student may take more than 19 courses is he or she meets the other requirements for graduation.

ACADEMIC REGULATIONS

GRADES

Reports on the work of each student are made at the end of each two-module period. At the time of final registration each full-time student must elect one of two reporting patterns for each of his courses, unless the option has been explicitly restricted for that course. First, the student may elect to receive an A, B, or C grade, with or without one of the modifying symbols plus and minus, or D or No Record. Second, he or she may elect to receive the letter P (indicating successful completion of the course at D- or better) or No Record. If the grading option is restricted by the instructor, the student may receive a Cr (indicating successful completion of the course at D- or better) or No Record. No records do not appear on the student's permanent record.

The faculty accepts the following qualitative description of grades:

In reference to the Clark student body as a whole over the long run,

A indicates work of distinction, of exceptionally high quality;

B indicates good work, but not of distinction;

C indicates satisfactory work;

D indicates marginal work;

NR indicates unacceptable work.

INCOMPLETES

A report of Incomplete may be permitted by approval of the College Board or Deans of Students only when sickness or some other unavoidable circumstance prevents completion of the course. A record of Incomplete incurred in Modules I-II must be made up no later than the following April 1; if incurred in Modules III-IV or summer term, it must be made up no later than the following October 1. If a course is not completed within the specified time, the record of Incomplete is changed to one of No Record.

CUMULATIVE SUMMATION OF GRADES

A yearly cumulative summation of the number of grades received in each grade category, compared with the institutional distribution of the grades, will appear on each student's transcript. There will be no calculation of a student's Grade Point Average.

ELECTION OF THE PASS OPTION

The availability of the Pass option in virtually all courses is designed to help minimize the competitive aspects of grading for those who find competition harmful to learning. Some students may wish to elect a number of their courses on this basis.

All students should remember that the great majority of graduate and professional schools *have expressed a preference for graded transcripts and encourage applicants to have many graded courses.* Pre-professional students and those for whom graduate school is a goal should exercise caution in employing the Pass option. Similarly, students who have interest in the attainment of honors such as Phi Beta Kappa and general course honors at graduation should exercise the Pass option cautiously.

RESTRICTION OF OPTION

A department may, with the approval of the Undergraduate Academic Board, restrict the grading option for its majors in the major program. An individual faculty member may, with the approval of the Undergraduate Academic Board, offer a course on a Cr/NR basis.

REPORTING GRADES TO OUTSIDE SOURCES

Unless a student indicates in writing to the Dean of Students that he or she wishes it not to be done in his or her case, information concerning academic performance will be released upon request to high schools attended by the student, to scholarship sources and to prospective employers.

ITHDRAWAL FROM COURSES

A student may withdraw from any course at any time ring the first four weeks of classes, regardless of the grade us far attained in that course, providing that, after with- awal, he or she is carrying no fewer than three courses.

OURSE CHANGES

A student may enter a course without special per- ission, unless such permission is required, any time up to al registration at the end of the first week of classes. After e first week, a student may enter a course with the per- ission of the instructor up to two weeks after the beginning classes in a single-module course, and up to four weeks ter the beginning of classes in a two-module length course. ereafter, a student may enter a course only with the per- ission of the instructor and the College Board.

The above regulations do not apply for the first mester. See the Registrar for course change information garding the fall semester.

LASSIFICATION OF STUDENTS

All students who have not been required to withdraw at e end of two given modules will be promoted if they have tisfactorily completed the following number of courses:

To the sophomore class	6 courses
To the junior class	14 courses
To the senior class	22 courses

ROBATION

A student whose accumulated courses at the end of two odules are less than three (or less than two and one-half in e case of a freshman) will be reminded by the Dean that he she is in jeopardy of being required to withdraw.

ISMISSAL

A student may be required to withdraw from the College failing to complete successfully the following number of urses in a two-semester sequence (4 modules):

Introductory Program (freshman)	5 courses
Program of Advanced Studies	6 courses

EXAMINATIONS

Final examinations are given at the end of each course in many College courses. Approximately one week is set aside for each examination period and an attempt is made to distribute the examinations for any individual student throughout this period. Absence from a final examination, except for the most compelling reasons, may result in No Record in the course. Other examinations and tests may be given at any time during the course at the convenience of the instructor.

CLASS ATTENDANCE

The College has no class attendance requirements. However, instructors have the prerogative of establishing such requirements for their own courses.

LEAVES OF ABSENCE

A student who is in good standing may apply to the Deans of Students for a leave of absence, after which he or she may return to the University without formal application for readmission.

HONORS AND AWARDS

DEPARTMENTAL HONORS

A student may elect a program leading to a bachelor's degree with honors in a particular subject at the beginning of the junior year and, in some cases, at the beginning of the senior year. Under this plan, the department appoints an honors advisor who assists the student in planning a unified program of courses for the junior and/or senior years. The program may include a maximum of six courses in which the student works with a large measure of independence under the supervision of the advisor. In the senior year, the student must pass a comprehensive examination given by the department.

Students may apply in writing to their major department for permission to take honors work, not later than May 1 of the sophomore year or, in some departments, in the junior year. Department approval is necessary for admission to such work. In exceptional cases and in certain departments, application may be made and admission approved by the department concerned as late as the first two weeks of the senior year but only with consent of the College Board.

Admission to an honors program does not relieve the student from any of the standing regulations. A student's candidacy for honors will be terminated at the end of any module in which he or she has not maintained a standard satisfactory to the department in which he is doing honors work. If candidacy is terminated for any reason, the amount of course credit to be allowed for honors courses will be determined by the College Board in consultation with the major department.

The department may recommend the student's graduation with honors, high honors or highest honors, the recommendation to occur at the conclusion of the honors program.

GENERAL HONORS

General Course Honors are determined by the College Board on the basis of 16 modules' work or its equivalent. Criteria such as grades, percentage of courses taken on P/NR and graded basis, and number of courses at Clark are used for determining the awarding of General Honors. Ordinarily 3/4 of a student's record at Clark must be graded if he or she is to be eligible for General Honors.

PHI BETA KAPPA

The Society of Phi Beta Kappa, founded at the College of William and Mary in 1776, is dedicated to the recognition and encouragement of outstanding scholarly achievement in liberal studies. The Clark Chapter, Lambda of Massachusetts, was established in 1953. Each year, a limited number of juniors and seniors are elected to membership on the basis of distinction in programs which are clearly liberal in character, with due consideration of evidence, both formal and informal, of high scholarship and creativity.

TUITION AND OTHER CHARGES

GENERAL INFORMATION

Undergraduate tuition, fees and other charges for 1973-74 are listed below. Charges for the Evening College and the Summer School can be found in their respective catalogs. Tuition, fees and other charges for graduate students are listed under the catalog section on The Graduate School.

Tuition, board, dormitory charges and certain fees are due and payable prior to the beginning of each semester. (These dates for 1973-74 are August 10 for the first semester and January 1 for the second semester.) No one is permitted to register for any semester until all financial obligations have been satisfactorily arranged with the University. A penalty fee is levied for late registration and late payment of charges.

TUITION

Tuition for each semester is based on a normal program of 4 courses. Students who enroll for less than the normal program are charged at the rate of $350.00 per course. Excess credit over 4 courses will be charged at $350.00 per course.

Special students also are charged at the rate of $350.00 per course.

ORIENTATION FEE

$25.00 is assessed for all new students to cover food and other related costs during orientation.

CONSOLIDATED FEE

Beginning in 1968, the University merged a large number of special fees formerly charged separately for laboratories, matriculation, graduation, etc. into a single uniform consolidated fee of $25.00 a semester. This fee is charged to all matriculated students regardless of the number of semester hours.

REFUND

Withdrawals are arranged in the Deans of Students Office. A student who officially withdraws in writing during the first week of any semester is allowed a refund of 80 per cent on tuition; during the second week, 60 per cent; during the third week, 40 per cent; during the fourth week, 20 per cent; after the fourth week there is no refund. The Consolidated Fee and Activities Fee are refunded by the same formula. There is no refund on other charges, except board, when a student withdraws from the University.

When a student has left, but not withdrawn from the University on the advice of a doctor within the first four weeks of a semester, and a decision is made later that the student must withdraw, tuition refund is made retroactive to he date of the doctor's recommendation, based on the schedule described above. A detailed statement of the refund policy may be obtained in the General Office.

CONTINGENCY DEPOSIT

All undergraduates are required to pay a $25.00 deposit o cover minor charges, such as property damage, which may be incurred during the year. They are billed each year for whatever charges are incurred; the balance is refunded upon completion of their studies.

DORMITORY DEPOSIT

A dormitory deposit of $25.00 is required each spring of upperclassmen to reserve a place in a dormitory. It is credited oward the dormitory charges. The deposit is forfeited if the student does not enroll for the specified semester.

STUDENT ACTIVITY FEE

A fee of $37.50 per semester, levied and administered by he Student Council, is required of all matriculated undergraduates. It pays for admission to and participation in a wide range of cultural and recreational activities.

APPLICATION FEE

A fee of $15.00 must accompany the application for admission to the College, It is not refundable.

ADMISSION DEPOSIT

A deposit of $100.00 is required of applicants when they accept the University's offer of admission. It is credited owards charges for the first semester. The deposit is foreited if the student does not enroll for the specified semester.

TUITION DEPOSIT

A deposit of $200.00 is required of all students planning to return to the University for their sophomore, junior or senior years. It is payable by July 1, and is credited toward charges for the fall semester. The deposit is forfeited if the student does not enroll for the specified semester.

KEY DEPOSIT

Deposit for keys may be required of the student for entrance to buildings, laboratories, personal lockers or mail boxes.

SUMMARY OF TUITION AND OTHER CHARGES

TUITION

Full Program (Four Courses)	$1400.00 per semester

CONSOLIDATED FEE

$25.00 per semester

BOARD

$275.00 to $355.00 per semester.

DORMITORY CHARGES

Room rent (single)	$350.00 to $400.00 per semester
Room rent (double)	$300.00 to $350.00 per semester

ACTIVITIES FEE

$37.50 per semester

OTHER FEES

Application (undergraduate)	$15.00
Health and Accident Insurance	$37.00 per year
Transcripts (no charge for first one)	$1.00

DEPOSITS

Admission (Freshmen)	$100.00
Tuition (Upperclassmen)	$200.00
Dormitory	$25.00
Contingency (see above)	$25.00

IDENTIFICATION CARDS

Identification cards are issued each year to all students without charge. This card is your official college identification and should be carried at all times. Loss should be reported immediately to the Purchasing Office. There is a $3.00 replacement charge for lost IDs.

STUDENT SERVICES

DINING HALLS

Dining Halls in Little Commons, Jefferson Hall, and Dana Center are operated for the convenience of students and staff of the University. Service is cafeteria style. The snack bar in Jefferson Hall is open to all members of the Clark community. A pub where beer, wine, and sandwiches are served is located in Dana Commons, and is open to members of the University community who have passed their 18th birthday.

KOSHER MEAL PLAN

A Kosher Meal Plan, organized by the Clark Chapter of Hillel, is available, at an additional charge, for students who wish to observe Kosher dietary laws. At the present time, the Plan provides for Evening Meals only.

DORMITORIES

Freshmen are ordinarily expected to live in University dormitories. Upperclassmen usually have the option of living in dormitories or moving off campus into private apartments. A request to live on campus is considered binding for the academic year; exceptions, of course, are made if a student withdraws or takes a leave of absence.

HEALTH SERVICE

The University Health Service provides for out-patient facilities for minor medical services to all students. A Nurse-Practitioner and a part-time physician are in attendance. Other physicians, other health specialists, and hospitals are available in Worcester.

PHYSICAL EDUCATION AND ATHLETICS

Programs are designed to stimulate ana encourage students to wider participation in physical activities to promote health and mental efficiency and lead to continuing participation throughout life. Participation is voluntary.

INTERCOLLEGIATE ATHLETICS

For students with a reasonably high level of skill and a well defined and strong interest in athletic competition, intercollegiate schedules are arranged in baseball, men's and women's basketball, golf, eight-oared shells, soccer, hockey, tennis, track and cross-country. Additional intercollegiate competition may be arranged as student interest warrants.

Clark University is a member of the National Collegiate Athletic Association, the Eastern College Athletic Conference, the New England College Athletic Conference and numerous sports associations.

INTRAMURAL ATHLETICS

The opportunity to gain some of the benefits of participation in competitive athletics is offered to all students through organized intramural competition in touch football, basketball, volleyball, tennis, handball, table tennis, paddle rackets and softball.

COED RECREATIONAL ATHLETICS

Students may participate in Coed and Recreational Leisure Time Activities including Archery, Badminton, Basketball, Fencing, Golf, Gymnastics, Horseback riding, Sailing, Swimming, Tennis, Softball, Volleyball, and in several Dance activities, including Folk, Square, and Modern Dance. The same activities are available to Men's and Woman's Groups. (Off campus arrangements may be made for Golf, Sailing, Horseback riding and Swimming).

ADMISSION

FRESHMAN ADMISSION

Clark University welcomes applications for admission rom men and women without regard to race, creed, color, or national origin. Selection is competitive and is based primarily on academic promise as indicated by secondary school performance, recommendations, and Scholastic Aptitude Test scores. Secondarily, decisions reflect consideration of the individual experience and particular circumstances unique to each candidate.

ENTRANCE REQUIREMENTS

In general, the completion of a minimum of 16 aceptable units of credit in a four-year secondary school program or its equivalent is required for admission to the reshman class. Such preparation typically includes four ears of English; two or more years of any foreign language tudies; two or more years of mathematics (three or more or those planning a science or mathematics major); at least one year each of social studies and natural science (more aboratory work for those planning a science major); and other credit electives, including the arts, recognized in the secondary school curriculum.

EARLY ADMISSION

Applications from accelerating students are encouraged when supported by unqualified and enthusiastic school ecommendations. Official records of all secondary schools must be submitted in every case.

SCHOLASTIC APTITUDE TEST

All applicants must submit by January of their final year of secondary school the results of the Scholastic Aptitude Tests as administered by the College Entrance Examination Board. Achievement Tests are not required, but candidates who have studied French or Spanish are advised that results of Achievement Tests in these subjects are used to help determine advanced placement.

ADVANCED STANDING

Freshmen may enroll with advanced standing upon presentation of a transcript for college-level work already completed. Additional credit or placement may be earned on the basis of Advanced Placement Test scores of 4 and 5. Scores of 3 are awarded credit at the discretion of the department concerned.

Further information concerning testing programs may be obtained from the student's college advisor or from the College Entrance Examination Board which may be addressed in the East at Box 592, Princeton, New Jersey 08540, and in the Far West at Box 1025, Berkeley, California 94701.

CAMPUS VISITS AND INTERVIEWS

Candidates for admission are encouraged to visit the campus and are invited to write or call the Admissions Office for detailed information concerning schedules, organized tours, appointments, and interviews. Although campus interviews are not required of applicants, we welcome the opportunity to arrange them for students wishing to visit Clark.

APPLICATIONS — EARLY DECISION

For freshman admission in September, candidates should initiate an application as early as possible during the first semester of the final year of secondary school and *no later than February 1*. Applicants for *early decision* — those for whom Clark is first choice — must file for admission by *November 1*. An application fee of $15.00, non-refundable, must accompany each application unless a waiver is being requested.

NOTIFICATION OF ADMISSION AND DEPOSIT

Time of notification of admission to the incoming freshman class is normally on or about April 15. Students who have applied for *early decision* will be notified on or about December 1.

Upon receipt of a formal offer of admission, undergraduate candidates must indicate acceptance of the offer by making an admission deposit of $100.00, non-refundable, to reserve a place at the University. This deposit is credited towards the first semester charges.

DEFERRED ENROLLMENT

Students wishing to elect the deferred enrollment option must submit a request in writing. The tuition deposit becomes due on April 1 of the following year for September enrollment, or by December 1 for the following January. Students seeking deferred enrollment should be prepared to submit transcripts of work completed elsewhere, if appropriate.

HOUSING ARRANGEMENTS

All single freshmen not living with their families are expected to live in University dormitories. Rooms are assigned by the Dean of Students during the summer prior to the arrival of the freshman class. Inquiries about housing should be sent to the Office of the College.

TRANSFER APPLICANTS

Clark encourages applications for admission with advanced standing from students attending two and four year institutions. The majority of students admitted enter at the junior level; many do, however, transfer to Clark with sophomore and advanced freshman standing.

Of special interest to transfer candidates are the University's new AB-AM program options in Comparative Literature, Environmental Affairs, and International Development.

The application deadline is April 15 (December 15 for places available at mid-year).

TRANSFER REQUIREMENTS AND NOTIFICATION

All applicants for transfer are required to submit evidence of good standing, complete transcripts of all previous academic work, secondary level and beyond, including the Scholastic Aptitude Test if taken, and any other information requested by the Admissions Committee such as recommendations and course description catalogs. Decisions are announced as soon as possible depending upon completeness and scope of records or the need for results of current work.

TRANSFER CREDIT

Credit is normally given for academic courses previously taken at accredited colleges and universities and for Advanced Placement Test results as described above. Credit for courses at non-accredited institutions is granted on a provisional basis to be evaluated upon successful completion of two semesters of full-time work at Clark. No credit is given for any course completed with a grade lower than a C-minus.

Evaluation of credits for college courses completed elsewhere is made by the Registrar prior to or at the time of a student's first registration at Clark and is used in planning a course program and in provisional classification as a freshman, sophomore, or junior. A maximum of 64 credits may be accepted in transfer toward the degree at Clark, and normally a minimum of two academic years in residence at Clark is necessary for completion of degree requirements.

UNDERGRADUATE FINANCIAL AID

GENERAL INFORMATION

Financial aid is allocated on the basis of financial need and academic performance and consists of scholarships, grants, loans and part-time employment. The Committee on Financial Aid assesses each student's financial situation on the basis of the computation system established by the College Scholarship Service of the College Entrance Examination Board, Princeton, New Jersey or the American College Testing Program, Iowa City, Iowa. The assessment takes into account family income and assets, age of parents, financial commitments to other dependents and members of the family, and other special circumstances. It is expected by the University that a student's resources for education will come first from family resources and his own savings and earnings.

COSTS

Expenses at Clark vary from student to student, but an erage student expense budget for 1973-1974 is as follows:

	Resident	*Commuter*
ition	$2,800	$2,800
mprehensive Fee	50	50
udent Activities Fee	75	75
ientation Fee (Freshmen and Transfers only)	25	25
ntingency Fee (Freshmen and Transfers only)	25	25
surance (Optional)	37	37
ard (20 Meal Plan and Room) (Double Room — Average)	1400	500
oks and Supplies — Average	150	150
othing, Laundry, Recreation, Incidentals	450	400
avel	*	175
Total	$4,987	4,212

reasonable allowance should be budgeted for travel tween University and student's home.

ETHOD OF APPLICATION

Freshmen — To be considered for financial aid, a ndidate for the Freshman Class must complete the llowing steps:

a. File an application for admission with the Director of Admissions by February 1.

b. File a completed Parents' Confidential Statement with the College Scholarship Service by February 1 (November 1 for early decision candidates) and direct that a copy be forwarded to Clark University. The Parents' Confidential Statement may be obtained from the secondary school guidance office.

c. Residents of Massachusetts are expected to make application to the Board of Higher Education for a Massachusetts State Scholarship. Information is available from secondary school guidance counselors. Students applying from out of state should investigate the opportunity of using their State Scholarship Program at Clark.

d. Notification — Entering freshmen will be notified of the decision of the Committee on Financial Aid simultaneously with the decision of the Admission Committee in mid-April of their senior year in high school.

RENEWAL OF AWARDS

Upperclassmen must reapply annually for financial aid by submitting an updated Parents' Confidential Statement to the College Scholarship Service prior to April 1. Forms may be obtained from the Financial Aid Office of the University.

Transfers — Students applying for admission with Advanced Standing and who are requesting financial aid should submit the Parents' Confidential Statement to the College Scholarship Service prior to April 15.

Applications for financial aid cover all scholarships, grants, loan funds — including National Direct Student Loans — and College Work-Study funds administered by the University. Because the University's financial aid funds are limited, not all students who apply for aid can be given an award. Students who have financial need and do not receive financial aid from the University at the time of admission should review their financial resources before accepting an offer of admission to the University inasmuch as a student should not ordinarily expect to receive an award as an upperclassman if he has not received an award as a freshman. Each year the University is able to help only a few new upperclass applicants for assistance.

The policy of the University is to renew aid to a freshman who continues to demonstrate financial need as an upperclassman. Financial aid awards may be adjusted from year to year as the student's need varies.

The Committee on Financial Aid expects that all financial aid recipients will contribute to the cost of their education from summer and part-time employment.

Financial aid awards have reasonable average-earnings expectations factored in. It is also expected that students on financial aid will not maintain or operate motor vehicles while in attendance at the University unless an automobile is needed for commuting purposes or in the earning of income.

The University administers financial aid by a method called "packaging"; i.e., each recipient is normally expected to meet part of his financial need through employment and the use of loan funds, with the balance coming from the University or some other source in the form of a scholarship or grant. Packaged financial aid awards are typically composed of a combination of two or more of the following four categories.

Jonas Clark Scholarships — a portion of the University's income is reserved for this purpose. Gifts from Alumni, parents and friends provide additional, important sources of funds for scholarship purposes.

Supplemental Educational Opportunity Grants are part of a Federal program of assistance to college students. They are renewable on a yearly basis and are specifically designated for students from low income families.

National Direct Student Loan Program provides funds for long-term loans which bear no interest until a person has completed full-time study. Normally a person borrowing from these funds will repay the amount over a period of up to ten years. National Direct Student Loans are granted on the basis of financial need and available funds. All National Direct Loan commitments are made contingent on Congressional appropriation of funds annually for this program.

College Work-Study Program — There are Federal funds to provide employment for students who have financial need. Application for employment through the College Work-Study Program may be made at the Financial Aid Office.

Further details on all forms of financial aid at the University may be obtained by writing or visiting the Financial Aid Office.

SUPPLEMENTARY SOURCES OF ASSISTANCE

Basic Educational Opportunity Grants — This is a new program of Federal assistance for students from low income families. Students should discuss application procedures with their Secondary School guidance counselor.

Guaranteed Student Loan Program (Also known as the Federally Insured Student Loan Program) — Guaranteed Loans are generally available in the various states and should be applied for through the local banks. Students may borrow up to $2500 for each academic year and not more than $7500 as an undergraduate.

The interest rate on the Guaranteed Loan is seven per cent (7%). However, some students while in college, may be eligible to have the Federal Government pay the interest. In order for Clark University to recommend Federal interest benefits, a Parents' Confidential Statement must be filed in order to determine the financial need of the loan candidate.

Students not eligible for the Federal interest benefits may still apply for a loan, but will have to pay their own interest from the time the loan is dispersed.

State Scholarships — Information pertaining to State Scholarship Programs is available at secondary school guidance offices.

Veterans' Benefits — Veterans admitted to Clark should communicate with their local Veterans Administration Office requesting an application for a program of education under Public Law 89-358.

Student Employment — Part-time employment for undergraduates is coordinated through the Financial Aid Office. There is work available in the various offices and departments of the University. Applications are available from the Financial Aid Office.

Most scholarships awarded by the University are designated Jonas Clark Scholarships. Funds for these scholarships are derived from University income and from endowed funds as follows: Because of the various restrictions placed on these funds, it is the policy of the College to select eligible recipients. Students should not apply directly for them.

The Reginald Bryant Allen Fund
The Alumni Group Scholarship
The B'nai B'rith Scholarship
The Gertrude and William Brodie Award
The Reina and Isidore Chaiklin Scholarship Fund
The Charles W. and Annie L. Bruninghaus Fund
The Clark University Faculty Women's Club Scholarships
The Theodore T. and Mary E. Ellis Fund
The Albert C. Erickson Scholarship
The A.D. Ross Fraser Scholarship
The Aaron Fuchs Memorial Scholarship Fund
The Paul S. Goldman Memorial Scholarship
The Bertram L. and Bessie T. Handleman Fund
The Frank H. Hankins Scholarship
The High School Basketball Tournament Scholarship
The Gertrude and Eva Hillman Scholarship
The Frances Tufts Hoar Fund
The Gordon A. Hubley Fund
The M. Hazel Hughes Scholarship
The George N. Jeppson Scholarship Fund
The Dr. Edmund Randolph Laine Scholarship Fund
The David Ashley Leavitt Memorial Scholarship Fund
The Levi Knowlton Fund
The Elizabeth T. Little Scholarship Fund for Women
The Homer Payson Little Scholarship in Geology
The Livermore and Ambulance Drivers Scholarship
The Robert H. Loomis Scholarship
The National Council of Jewish Women Scholarship
The Alice Friend Newton Memorial Scholarship
The Abraham Persky Scholarship Fund
The Charles B. Randolph Fund
The Helen Brewster Randolph Memorial Scholarship

he Jennie L. Richardson Scholarship
he William Richardson Scholarship
he Sanford Memorial Scholarship
he Samuel Schanberg Memorial Scholarship Fund
he Fredric T. Sewall Scholarship Fund
he Henry L. Signor Scholarship
he Benjamin R. and Grace F. Vanderford Student Aid Fund
he Whitman Scholarship
he Henry A. Willis Scholarship

NTEGRATED NDERGRADUATE-RADUATE PROGRAMS

In the fall of 1973, Clark University inaugurates a new parture in higher education with the creation of a number new programs which bridge undergraduate and graduate lucation. Noting the changes in graduate education and ojected manpower needs in the United States, the niversity has established a new set of program options for lvanced undergraduate students. Each program will nor-ally be for a three-year span, beginning in the junior year nd leading directly to an M.A. degree. The B.A. degree will e awarded en route to the M.A. degree. The integration of ndergraduate and graduate work will usually accelerate udent progress to an advanced degree. Each degree ogram will have a strong career orientation, providing the udent with the knowledge and skills to enter a profession rectly or to continue on in a Ph.D. program elsewhere. Each ill also emphasize interdisciplinary education based upon a mmon core of course work and opportunity for individual ofessional interests. Formal application and admission to e program is required, and both Clark and transfer students e encouraged to apply. Transfer students interested in aking application to the program should direct inquiries to e Admissions Office.

The University has already approved three new programs comparative literature, environmental affairs, and in-rnational development. The program in comparative erature centers on a problem-oriented approach to erature and theatre. Students will, in consultation with an advisory committee, formulate an individualized program of study which will stress interdisciplinary perspectives around a particular problem or theme. The program in environmental affairs will train professionals for carrying out a particular set of functions — technical, administrative, research, evaluative, planning and teaching — that relate to the understanding and management of environmental affairs. The program in international development will train planners, managers, organizers and educators in international development.

Eventually other integrated undergraduate-graduate programs will be added until a network of such programs is available as a new set of options in the University College. Several such programs are now in the planning stage and will become available in 1974-75.

COMPARATIVE LITERATURE

Participating Faculty

Raymond E. Barbera, Ph.D., Program Director and Professor of Romance Languages
Karl J. R. Arndt, Ph.D., Professor of German
J. Richard Reid, Ph.D., Professor of Romance Languages
J. Fannin King, M.A., Associate Professor of Romance Languages
Walter Schatzberg, Ph.D., Associate Professor of German and Chairman, Department of Foreign Languages and Literatures
Marvin A. D'Lugo, Ph.D., Assistant Professor of Spanish
Pierre L. Horn, M.A., Assistant Professor of French
Kenneth Hughes, Ph.D., Assistant Professor of German
Hartmut Kaiser, Ph.D., Assistant Professor of German
Michael K. Spingler, Ph.D., Assistant Professor of French
Judith P. Hallett, Ph.D., Lecturer in Classics
Lorri R. Toepel, Ph.D., Lecturer in Classics

Program

The program is available to students who have completed the sophomore year and who are competent in at least one foreign language (French, German, Russian or Spanish). It centers upon a problem or project approach in which the student will, in consultation with his advisory committee, define a particular problem or project which will serve as the focus of his entire academic program over the normal three-year period. The nature of the problem will determine the courses from various disciplines needed for its solution. Each program will, therefore, be interdisciplinary and will vary according to individual student need and professional interests. Program flexibility depends primarily upon the student's application and ingenuity.

There will be two major tracks or emphases in the program. The *Studies in Narrative* is intended to acquaint the student with the diversity of expression encompassed by the historical development of narrative form, as well as to bring him into contact with a variety of contemporary narrative genres. The principal objective of this track is to develop an awareness of the nature of narrative as a dynamic combination of cultural ambience and the particular artistic techniques of specific authors.

The novel will be a major genre studied in this track. Since the novel cuts across national, political, social, cultural and linguistic barriers and mirrors the enduring obsessions and aspirations of man, the student will explore techniques, patterns and themes in the novels of various cultures. The relatedness of fictional works to the individual's particular problem or project will be stressed throughout.

The *Studies in Drama* concentrates upon what happens to a written text when it is transformed in the theatre. In this track, students will combine the intellectual, scholarly work of a literature department with the creative, skill-oriented work of a theatre art department. There is a recognition that the dramatic text is first of all something written to be performed. The program seeks to unite research and theatrical performance by approaching the latter as an investigatory process essential to a deeper understanding of dramatic art.

The *Studies in Drama* will emphasize studying and staging plays in their original language as well as in English. A Foreign Language Theatre Workshop has been designed to improve language skills through the creative process of play production. Since the Workshop enables the student to master the language while pursuing research in comparative drama, it occupies a central role in this track. A Foreign Languages Summer Workshop provides an opportunity for students to study directly with actors in either France or Spain.

Early in the program, the student will confront the task of formulating the problem or project which will guide his studies. The basic required course, *Fundamentals of Literature*, will stress techniques of problem formulation. A student will then decide to enter either the dramatic or narrative track. The *Nature of Narrative* and the *Nature of Drama*, the foundation courses for each respective track, will develop the problem-solving approach in a more specialized area. The *Colloquium on Problems*, attended by all faculty and students, will be the forum in which the problem-solving approach will be considered in all its ramifications.

A teaching internship will be available for all qualified students in the final year. Interns will serve as drill masters and discussion leaders in foreign language, foreign literature and comparative literature courses and will be involved in the course in its entirety. A student who selects the drama track may in his final year assist in the direction and production of a foreign language play.

Financial Aid

Some partial and full tuition remission scholarships will be available in the final year of the program. Several teaching assistantships will also be available to students involved in the teaching internship in their final year. All awards will be based upon merit and need.

Professional Opportunities

Students who complete this program and receive the M.A. degree have several professional opportunities. The student can continue graduate studies either in comparative literature or in the foreign language in which he is proficient. If he has taken the teaching apprenticeship, he has acquired experience in the teaching of foreign language and literature and would qualify for high school or junior college teaching. Students in drama would have career opportunities in the theatre and in teaching. Other professional careers in journalism and translating are also, of course, possibilities.

ENVIRONMENTAL AFFAIRS

Participating Faculty

Harry Schwartz, B.C.E., Program Director and Professor of Environmental Affairs
Leonard Berry, Ph.D., Professor of Geography
Saul B. Cohen, Ph.D., Professor of Geography and Director, Graduate School of Geography
Christoph Hohenemser, Ph.D., Associate Professor of Physics

ichard Howard, Ph.D., Assistant Professor of Geography
oger E. Kasperson, Ph.D., Associate Professor of Government and Geography
obert W. Kates, Ph.D., Professor of Geography
ichael McClintock, Ph.D., Professor of Technology and Man
rank Puffer, Ph.D., Associate Professor of Economics
ohn Reynolds, Ph.D., Professor of Microbiology
obert Ross, M.A., Assistant Professor of Sociology
eymour Wapner, Ph.D., Professor of Psychology and Chairman, Department of Psychology

rogram

The program will begin in the fall of 1974 with the details the program to be worked out during the 1973-74 academic ear. Tentatively the program will consist of specialized ourses, seminars, studio work and internships, built upon e general arts or a science or engineering base. Most of the ommon conceptual or tool work will be during the first and econd years (*i.e.*, junior and senior years) of the program. he professional specialization will occur during the third ear. An internship during the summer of the first or second ear will provide the practical experience, the results of hich will be submitted as a master's thesis. Students enring the program with a B.A. will normally need two years, at least one and one-half years, to round out their inrmediate course work and to complete their year of ofessional training.

Clark and transfer students from other institutions will ormally be admitted to the program at the beginning of the nior year or at the B.A. level. By the end of their junior year, ndergraduates will have all prerequisite courses fulfilled. he prerequisites will include such general courses as ementary chemistry, biology, physics, statistics, physical eography, cartography, computer programming, onomics, psychology or political and social philosophy. tudents entering at the B.A. level for a two-year M.A. ogram will, in their initial graduate work, complete those asic courses that were not included in their undergraduate urriculum or in their subsequent experience.

Although the formal program does not begin until eptember, 1974, some existing courses may be eligible for e program. Interested students should consult with the rogram Director.

Financial Aid

Several teaching assistantships and tuition remission scholarships are available for qualified applicants.

Professional Opportunities

Five major professional roles are envisioned in this program. Each represents a professional specialization that requires unique as well as common training within the program. These roles are as follows:

Regional Environmental Planner
Land Resources Planner
Water Use Planner
Urban Environmental Monitor
Environmental Educator

Professional opportunities for such roles are available in planning, government service, education, and public interest and civic organizations.

INTERNATIONAL DEVELOPMENT

Participating Faculty

Leonard Berry, Ph.D., Program Director and Professor of Geography
Richard Ford, Ph.D., Assistant Program Director and Associate Professor of Comparative History
Marvin A. D'Lugo, Ph.D., Assistant Professor of Spanish
Cynthia Enloe, Ph.D., Associate Professor of Government and International Relations
Stanford N. Gerber, Ph.D., Associate Professor of Social Anthropology and Sociology
Allan E. Goodman, Ph.D., Associate Professor of Government and International Relations and Chairman, Department of Government and International Relations
Alan F. Gummerson, Ph.D., Assistant Professor of Economics
Robert C. Hsu, Ph.D., Assistant Professor of Economics
Robert W. Kates, Ph.D., Professor of Geography
Ivory T. Robinson, Ph.D., Assistant Professor of Government and International Relations
Theodore H. Von Laue, Ph.D., Jacob and Frances Hiatt Professor of History and Chairman, Department of History

Program

The formal program will begin in the fall of 1974 with the details of the program to be worked out during the 1973-74 academic year. The program is aimed primarily at a small group of students who are deeply involved in the problems of development and who wish to make a career in some aspect of this field. Tentatively, course work, an internship, and a research experience will be combined in the program.

The tentative curriculum will consist of a three-year sequence: the junior and senior undergraduate years and one graduate year. For certain internships which may stretch out for a full year, or for a few exceptional cases where students enter with B.A. degrees from other institutions, it may be necessary to require a two-year M.A. sequence with the first year being off campus. In most cases, the internship will extend for approximately six months, occurring somewhere toward the end of the second (*i.e.,* senior) undergraduate year.

The program also tentatively involves the development of proficiency in several types of skills. Each student will be expected to have, or to develop, a working knowledge of at least reading French. Other languages such as Spanish, Swahili, or Portuguese are regarded as specialized languages. Specialized skills expected of students would be a working knowledge of the principles of economics, elementary statistics, and possibly some experience in working with computers.

A core curriculum is tentatively planned with specialized tracks available for students in planning, management, and education. Upon completion of the program, the student will receive the M.A. degree. Although the program as a whole will not begin until September, 1974, some existing courses in the departments of economics, geography, history and government may be eligible to be applied to the program. Interested students should consult with the Program Director or Assistant Director.

Financial Aid

Several teaching assistantships and tuition remission scholarships will be available for qualified students.

Professional Opportunities

The program concentrates on training planners, managers, organizers and educators in international development. This career line not only has immediate applicability but offers possibilities of moving into careers not yet comprehended or identified. The program will meet a variety of needs of national and international agencies as wel as those of business and multi-national corporations. The success of the program in developing internship opportunities with specific organizations in various parts of the world will clearly influence placement opportunities.

THE GRADUATE SCHOOL

GENERAL INFORMATION

Clark University was initially established in 1887 as the second graduate institution in America. Its faculty and graduates have endowed the University with an impressive record of accomplishments through the years. Under the administration of the Graduate Board, Clark offers programs leading to master's and doctor's degree to qualified holders of a bachelor's degree or its equivalent of attainment.

Master of Arts degrees are offered in the fields of biology, biomedical engineering (in cooperation with Worcester Polytechnic Institute), chemical physics, chemistry, economics, education, English, geography, government, history, international relations, mathematics, physics and psychology. The Master of Business Administration degree is offered by the Department of Management.

Doctor of Philosophy degrees are offered in biology, chemistry, chemical-physics, economics, geography, history, international relations, mathematics, physics and psychology. A Doctor of Education degree is offered by the Department of Education.

Post-doctoral training is conducted in geography, psychology and the sciences. Inquiries should be addressed to the chairman of the department concerned.

Departments which do not at present accept candidates for graduate degrees may offer courses which are suitable for inclusion in a program of graduate study.

Scholarships, fellowships and assistantships are listed at the end of this section. Additional information concerning departments and their offerings will be found in the section entitled "Departments and Courses."

NQUIRIES

Inquiries by students in American institutions con-
erning specific programs of graduate work should be ad-
ressed to the chairman of the department concerned.
nquiries by foreign students should be addressed to the
ean of the Graduate School.

DMISSION TO THE GRADUATE SCHOOL

Admission to the Graduate School may be granted only
y the Dean of the Graduate School acting for the Graduate
oard on the recommendation of a department of the
niversity. Admission to the school does not imply ad-
ission to candidacy for a degree.

Application: A prospective applicant from an American
nstitution should communicate with the department in
hich he expects to do his major work. If he is encouraged by
he department to make application, he will be provided with
n application form which, accompanied by a $20 application
ee, should be returned to the chairman of the department. In
ddition, the applicant should arrange to have sent to the
hairman of the department concerned an official transcript
f all undergraduate, and any subsequent academic work,
nd three letters of recommendation from persons who are
ompetent to judge his qualifications for graduate study.

Departments may request the submission of additional
aterial, and most require a record of attainment in the
raduate Record Examination given by the Educational
esting Service, Princeton, New Jersey. All applicants are
rged to take, and to submit the results of the Graduate
ecord Examination verbal, quantitative and advanced tests.

A foreign student, if encouraged by the Dean to make
ormal application, should provide a certified English
ranslation of his official record (if not in English), evidence
f English proficiency (TOEFL), at least two letters of
ecommendation and a statement concerning his financial
esources, or agency support.

Applications for both admission and for financial aid
hould be completed not later than *February 15* if the ap-
licant intends to begin his studies the following September.
pplications for admission may be submitted, however,
hroughout the year.

Admission: Admission to the Graduate School is
ranted for entry only at a specified time and lapses if the
tudent fails to enter at that time. Admission as a part-time
raduate student may be granted to qualified applicants who
cannot devote full time to study, upon recommendation of the Department.

Application for regular admission should be made through the department concerned. Application for admission as a *special status graduate student* (not in a degree program) should be made through the Registrar's Office.

If a student, when admitted, was a candidate for a degree elsewhere, he must arrange upon receipt of that degree to have a supplementary transcript, including a notation of the degree conferred, sent directly to the Dean of the Graduate School.

MASTER OF ARTS

Residence: An academic year (8 semester courses) of study in residence is a minimum requirement for a master's degree. Residence study is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the University faculty.

Foreign Language: A reading knowledge of a foreign language may be required of candidates for the degree of Master of Arts at the discretion of the major department. Language or other special requirements are included in the department announcements in the catalog.

Candidacy: Application for admission to candidacy for a master's degree should be filed with the Dean of the Graduate School not later than the first week of the last full semester which the student expects to spend in residence as a candidate for his degree. Forms are obtainable at the Registrar's Office.

Applications will be considered by the Graduate Board when the student has completed one semester of full-time graduate work or its equivalent in residence at the University and obtained the written endorsement of his major department.

Candidacy for the degree of Master of Arts is valid through the fourth commencement after admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board.

If admission to candidacy is not filed at the time of completion of residence, then, after the fourth commencement, admission to candidacy will be approved once for a three-year additional period by vote of the Graduate Board.

Course and Examination Requirements: Each student must meet a minimum requirement of 10 semester courses, and his program must be approved by the chairman of the department. One of his courses may be a research course devoted to the preparation of his thesis. Credit for a maximum of two courses of course work at another institution may be approved by the Graduate Board upon the recommendation of the department.

Each candidate must make a satisfactory record in such written examinations as may be required by the major department and in a final oral examination by a committee of three or more, one of whom must be a member of the Graduate Board.

Thesis: The thesis is written on a topic in the field of the student's special interest under the supervision of a member of his major department and in a style, length and format that is appropriate to the problem being researched. The ribbon copy of the thesis, a precis approved by the supervising instructor, and an academic history must be deposited in the Registrar's office not later than three weeks before the date of the commencement at which the degree is to be conferred. At least one additional copy of the thesis and the precis must be delivered to the major department which may require more than one copy. The precis may not exceed 75 words in length. The title page, precis and academic history forms are obtainable from the Registrar's Office. The ribbon copy of the thesis must be typed as prescribed in "The Master's Thesis" issued by the Graduate School Office with its notification of admission to candidacy.

The thesis is deposited by the Registrar in the University Library. The precis is printed in an annual publication, *Dissertations and Theses.*

Diploma Fee: This fee for the Master of Arts Degree is $25.00. It covers the cost of the diploma, publication of the precis in the booklet *Dissertations and Theses* and binding of the library copy. It is payable when the thesis is deposited with the Registrar. Students who do not write a thesis, including those receiving the degree on the alternative program, must pay this fee no later than the date on which theses are due in the Registrar's Office.

Alternative Program: A candidate for the degree of Master of Arts may be recommended for the degree without a thesis when he has passed the preliminary doctoral examination.

Non-Resident Students: Students who have been admitted to candidacy for the degree and are not *registered* students are required to pay the non-resident fee of $12.50 per semester. This fee doubles on renewal of candidacy.

MASTER OF ARTS IN EDUCATION

The residency, candidacy, course, examination, and diploma fee requirements are the same as those listed for the degree of Master of Arts.

Thesis: Students may choose one of three options, subject to the approval of the Department of Education. They may choose to (1) prepare a thesis as required for the M.A. degree; or (2) elect two additional subject-matter courses; or (3) elect a research-seminar in which papers are prepared and presented to fellow students and staff.

Further information concerning the degree of Master of Arts in Education may be found in the catalog section, "Departments and Courses," listed under the Department of Education.

MASTER OF BUSINESS ADMINISTRATION

This degree is offered through the Department of Management. For further information, see the catalog section "Departments and Courses," listed under the Department of Management.

DOCTOR OF EDUCATION

The program leading to the degree of Doctor of Education emphasizes human development and learning as it relates to curriculum, instruction, and evaluation and in the sociology of education. The requirements for this degree closely parallel those for the degree of Doctor of Philosophy (see below). See catalog section on Department of Education for further information

DOCTOR OF PHILOSOPHY

Only such candidates as give evidence of general proficiency, power of investigation and high attainments in the special fields in which their major subjects lie will be encouraged to proceed to the degree of Doctor of Philosophy

Residence: The minimum requirement is one year of full-time study (8 semester courses beyond the M.A.), or its equivalent in part-time work, in residence which is broadly defined as graduate work done at Clark University under the mmediate personal supervision of at least one member of he University faculty.

If the degree of Master of Arts has been earned at Clark, his requirement is an addition to the residence requirement or that degree.

Foreign Language: Each graduate department sets its wn language or related requirements as the student's field f research may demand, and must report such requirements n each case to the Dean of the Graduate School. If a anguage is required either the Educational Testing Service oreign Language Tests or on-campus testing are employed t the discretion of the department.

Preliminary Examination: Upon completion of reparation in his fields of study a prospective candidate akes a preliminary examination set by his major department. his examination may be written or oral, or a combination of oth. The chairman of the department may invite non-nembers of the department from within or without the niversity to participate in the examination.

Candidacy: An application for admission to candidacy hould be filed when the applicant has (1) completed two full cademic years of graduate work, or its equivalent in part-ime work, including one year at Clark University; (2) com-leted the departmental requirements in a foreign language; 3) passed a preliminary examination in his chosen field of tudy; (4) obtained the written endorsement of his major lepartment. Application forms are obtainable at the legistrar's Office.

Candidacy for the degree of Doctor of Philosophy is valid hrough the fourth commencement after admission to andidacy. For satisfactory reasons, candidacy may be xtended once for an additional period of three years by vote f the Graduate Board. Should a period of four years elapse etween completion of prerequisites to filing for candidacy nd actual filing for candidacy, then, for satisfactory easons, candidacy may be accepted once for a three-year eriod by vote of the Graduate Board.

Dissertation: A dissertation which is expected to make n original contribution to some special field of knowledge is equired of each candidate. The dissertation, approved by the hief instructor or dissertation committee, is laid before the xamining committee at the final oral examination.

An abstract of the dissertation, not exceeding 600 words length, and a precis, not exceeding 75 words, both ap-roved by the instructor or committees under whom they ere written, are also required.

Four weeks before the degree is to be conferred, the ribbon copy of the dissertation, together with two official title pages, an academic history, the ribbon copy of the abstract and of the precis, each in a form prescribed, must be delivered to the Registrar. At the same time, one or more copies of the dissertation and of the abstract may be required by the major department. The title pages, precis and academic history forms are obtainable at the Registrar's Office. The ribbon copy of the dissertation must be typed as prescribed in "The Doctoral Dissertation" and "Suggestions for the Preparation of Doctoral Dissertations for Microfilming" issued by the Graduate School Office with its notification of admission to candidacy.

The Registrar deposits the dissertation and the abstract in the University Library where they remain permanently. A microfilm copy of each dissertation is made by University Microfilms, Inc., of Ann Arbor, Mich., and is available for duplication by them on request. The abstract is printed in *Dissertation Abstracts;* the precis is printed in an annual publication, *Dissertations and Theses.*

Articles published in referred journals will be accepted in lieu of a dissertation provided guidelines established by the Graduate Board are met.

Final Examination: The final examination is oral and lasts for at least two hours. Additional written examinations may be given if the major department so directs. The candidate is expected to defend his dissertation and, at the discretion of the examining committee, may be questioned on the entire special field of his study. The oral examination is conducted by a committee of at least four members, composed of the chairman of the department, at least one other member of the Graduate Board, and such members of the department and non-members from within or without the University as the chairman may appoint. The chairman notifies the Dean of the Graduate School, at least one week in advance, of the time and place of the examination and the composition of the committee. The Dean is authorized to invite any person from within or without the University to be present and to assist in the examination.

Diploma Fee: This fee for the Doctor of Philosophy degree is $85.00. It covers the cost of the diploma, hood, publication of the precis in the publication *Dissertations and Theses,* publication of the abstract in *Dissertation Abstracts* and binding of the library copy of the dissertation. It is payable when the dissertation is deposited with the Registrar.

Non-Resident Students: Students who have been admitted to candidacy for the degree and are not *registered* students are required to pay the non-resident fee of $25.00 per semester. This fee doubles on renewal of candidacy.

POST-DOCTORAL STUDY

Post-doctoral students are classified in three categories: *Honorary Fellows* who are visitors for varying length of time, always more than a few days, who wish to observe activities of a department, to study, or to carry on research, but without formal teaching duties or support by the University; *Research Associates* who work full-time with designated members of the University staff on research projects, normally supported by grants, without formal teaching duties but with some responsibility for directing laboratory assistants; and *Trainees* who enroll in a formally offered post-doctoral training program.

The Honorary Fellow and Research Associates enjoy faculty status, although the extent to which faculty privileges may be granted may be restricted by availability of space and other resources.

GRADUATE SCHOLARSHIPS, FELLOWSHIPS AND ASSISTANTSHIPS

Graduate fellowships and scholarships are provided for well-qualified graduate students by the University from endowed funds and from other sources. Financial aid to graduate students is available also in the form of grants from a number of special funds, and in some departments, from sponsored research grants. A limited amount of part-time employment is available in the various offices and departments of the University. Students who receive awards must obtain permission from the department before accepting employment.

Application:

Application for a scholarship or fellowship to begin in September should be made before *February 15* to the chairman of the department in which the applicant expects to do his major work. Late applications are acted upon periodically. All applications, after endorsement by the department, go to the Graduate Dean for final action.

Research Fellowships:

These fellowships may be awarded to graduate students who have fulfilled their residence requirements and who are pursuing a full-time doctoral program on campus.

Teaching Assistantships:

There are three categories for Teaching Assistantship appointments:

1. *Part-time Lecturer* — a non-probationary, part-time faculty position which does not lead to consideration for tenure or faculty fringe benefits (TIAA, vacation, etc.). The student is responsible for a small class and should have considerable independence over all aspects of teaching and grading. He will be under the general supervision and direction of a senior faculty member.

This category is reserved for the advanced student who has manifested clearly his skill in teaching and is qualified and experienced in the subject he will teach. The student should be accorded as many faculty privileges as possible, e.g., attending department meetings and having office space. Stipend for this position is $3,000 for nine months.

2. *Teaching apprentice* — students with prior teaching experience, either as undergraduates or as a graduate assistant. Responsibilities include conducting discussion sections for a course, supervising laboratory sections, running tutorial sessions, grading papers and projects and discussing these with the undergraduate students.

The student in this category should be under the direction of a professor who would assume responsibility for his training as a teacher. Stipend for this category is $2,800 for nine months.

3. *Teaching Assistant* — students with little or no teaching experience. Responsibilities include tasks that allow them to observe experienced teaching assistants or instructors and learn their pedagogical methods. Duties are assigned on a job basis and may include assisting other senior TA's, setting up and tearing down laboratory equipment, and doing a variety of other tasks associated with teaching a course or section.

The assistant may grade examinations only if he is part of a general grading team of assistants or under the direct supervision of a senior TA or instructor. Stipend for this category is $2,600 for nine months.

The time commitment for each category is approximately half-time. Tuition will be remitted on all three ategories. The number of hours of study an assistant at any evel takes in addition to his teaching responsibilities should e decided by the department chairman with overall upervision from the Graduate Dean. The Internal Revenue uling which states that payment for teaching is non-taxable rovided it is a requirement for an advanced degree is still in ffect, although we have been informed that some cases at ther schools have been questioned. If a student chooses to ave tax withheld, he is usually entitled to a tax refund when e files with the Internal Revenue Service.

Note that the departments of Biology, Chemistry, conomics, Geography, Government, History, Mathematics, hysics, and Psychology require teaching experience for raduate degrees. See the departmental announcements in e catalog section on "Departments and Courses".

ssistantships:

In several departments, assistantships are available. hey involve a variety of services including research with tipends to correspond, and usually provide the student with xperience which will be useful in his later professional work.

raduate Fellowship and Scholarship Funds:

Stipends for fellowships and scholarships are rovided by:

The Alumni Association Fund, provided by alumni who old the degree of Doctor of Philosophy to benefit students udying for that degree.

The George S. Barton Fund, a bequest from the onorable George S. Barton of Worcester, to be used for the enefit of native-born citizens of Worcester.

The Elnora W. Curtis Fund, a bequest from Dr. Elnora W. urtis, A.M. 1908, Ph.D., 1910, for the benefit of graduate udents.

The Eliza D. Dodge Fund, to be granted to graduate udents of limited means who are engaged in research work.

The Henry Donaldson Jordon Award in History for high andard of scholastic achievement, and qualities of aracter which will be valuable in the training of teachers.

The Joseph F. Donnelly Memorial Fund, a bequest from ucretia F. Donnelly to help men who are enrolled in a course ading to the degree of Doctor of Philosophy.

The John White Field Fund, established by Mrs. Eliza W. eld to provide for the minor needs of a scholar or fellow.

The Austin S. Garver Fund, a bequest from Austin S. Garver, member of the Board of Trustees from 1908 to 1918.

Graduate School Scholarship Fund, a bequest from Alexander H. Bullock, a member of the Board of Trustees from 1926 to 1946 and president of the board from 1938 to 1946.

The George Frisbie Hoar Fund, the gift of Andrew Carnegie in honor of the second president of the University's Board of Trustees.

The Myers Fund, a gift of George E. Myers, Ph.D., '06, to assist graduate students to do research in education and psychology.

The Charles H. Thurber Fund, provided by Charles H. Thurber, member of the Board of Trustees from 1913 to 1938 and president of the board from 1919 to 1937.

GRADUATE LOANS

Loans, bearing interest at three per cent per year after completion of residency, are available for full-time graduate students upon registration. Applications are available at the Graduate School Office.

LOAN FUNDS

The Mary S. Rogers Scholarship and Loan Fund, established in 1926 for the benefit of students in the graduate school.

The Mary M. Thurber Fund, established by the late Dr. Charles H. Thurber, former president of the University Board of Trustees, as a memorial to his mother.

For loans from these and other sources that may become available, application should be made at the Graduate School Office.

DEPARTMENTAL FUNDS

The Wallace W. Atwood Research Fund. The income of this fund may be used at the discretion of the staff in the Graduate School of Geography for the promotion of field studies in geography by any member of the staff, or any one of the alumni holding a graduate degree from the Graduate School of Geography, or for the publication of results of such research work.

The Chester Bland Fund. The income of this fund is preferably used to provide aid to a promising student, either in residence or engaged in research elsewhere under the direction of the Department of History. It may also be used to defray the expense of visiting lecturers or of departmental research.

The Wallace W. Greenwood Fund. The income only is to be divided between the Departments of Physics and Chemistry and to be used for any purpose within the scope of these two departments.

The Morton L. "Sonny" Lavine Foundation is a memorial to Lieutenant Lavine of the United States Army, World War II. The income is to be used for the promotion of research in the Department of History.

The Libbey Fund, bequeathed to the University by Mary E. Libbey, is to establish a fellowship in physical geography and to aid the Department in that field.

HOUSING AND BOARD

Off-campus rooms and apartments for both men and women are available in the immediate area of the University. For information concerning accommodations, write directly to the Office of Buildings and Grounds, which keeps a bulletin board of available off-campus rooms and apartments, or to the department concerned. Students should plan to arrive a few days before registration in order to arrange for housing because of the limited number of suitable off-campus apartments in the immediate area.

Graduate students are invited to take their board in the University dining halls under one of the food plans available. They will also find the Snack Bar in Jefferson Hall available for single meals.

INFIRMARY AND INSURANCE

A low-cost insurance plan covering ordinary medical expenses and limited maternity benefit for married students is available through the University. Unless a student is protected by similar insurance, he must enroll in this plan since all graduate students must be covered by Health and Accident Insurance. Students are not automatically covered by this insurance but must apply for it through the Graduate School Office where applications are available.

Graduate students are entitled to use of the Infirmary for minor first-aid needs.

GRADUATE TUITION AND OTHER CHARGES

Tuition and insurance charges are payable when the semester bill is received. Identification cards are provided each year of residence. A late registration fee of $25.00 is charged if registration is not completed by the end of the second week of the semester. Candidates who are not in residence must pay the non-resident fee until the requirements for the degree are fulfilled; non-payment will automatically terminate candidacy.

SCHEDULE OF TUITION AND OTHER CHARGES

Tuition: Full Program: $1,400.00 per semester.

If less than a full program, the student will be charged according to the fraction of a program indicated by the Chairman of the department on the registration card.

Tuition for Special Graduate Students $350.00 per course.

Insurance:	*Regular Coverage*	+	*Optional Supplement**
Single Students	$ 37.00	+	$ 40.00
Married Student & Spouse	$135.00	+	$ 80.00
Family Plan	$165.00	+	$120.00

*Optional supplement premium is in addition to premium fo regular coverage.

Diploma Fee: (payable at the time the thesis or dissertation is deposited with the Registrar:

Students who do not write a thesis or dissertation, including those receiving the degree on the alternative program, must pay this fee no later than the date on which theses are due in the Registrar's Office.

Master's Degrees	$25.00
Doctor of Philosophy and Doctor of Education	$85.00

Non-Resident Candidate Fees: (payable on November 1 and March 1). If the thesis or dissertation is deposited with the Registrar before either date, no fee is charged for the semester.

The fees double upon renewal of candidacy.

Master' Candidates $12.50 per semester

octoral Candidates $25.00 per semester
(For the Master of Business Administration tuition and
es, see the catalog section "Department of Management".)

EFUND

A student who officially withdraws in writing during the
rst two weeks of any semester is allowed a refund of 60 per
ent on tuition; during the third week, 40 per cent; during the
urth week, 20 per cent; after the fourth week there is no
fund. There is no refund on other charges, except board,
hen a student withdraws from the University.

HE SUMMER SCHOOL

UMMER STUDY

Intensive instruction in numerous fields of study is
ffered in the summer programs. A variety of courses is
ffered for undergraduates, graduate students and teachers.
student may register for up to a full semester of work each
ummer by attending all the sessions. Evening courses are
lso available during the summer to all students to continue
eir education while engaged in day-time employment.

EGREES AND CREDIT

All courses offered in the Summer School are accepted
Clark for credit toward bachelor's degrees unless they are
pecifically limited in the description of the course. Many
ourses count toward the degrees of Master of Arts, Master
f Arts in Education and Doctor of Philosophy. However,
pproval for such courses should be obtained in advance
om the student's major department.

Graduate students formally registered in the Summer
chool may, with the approval of their major department,
roll in thesis courses under the direction of regular
embers of the staff.

UMMER SCHOOL CATALOG

Detailed information concerning the Summer School are
ontained in a Summer School catalog which may be
equested from the director of the Summer School.

THE EVENING COLLEGE

GENERAL INFORMATION

The Evening College, established in 1953 as an institution devoted to adult learning, has three primary functions. With the conviction that education in our modern society must be a life-long process, it provides university education for adults of all ages who seek further knowledge and personal development through selected studies in the broad areas of the liberal arts. Further, in recognition of the rapidly developing and changing needs of business and the professions, it provides courses designed to help working men and women improve their occupational skills and to preparefor positions of increased responsibility.

Secondly, the Evening College provides an opportunity for adults to earn the bachelor's degree, and in some cases the master's degree, exclusively by evening study, through programs planned to meet the unique educational needs of the mature person. Formal programs are available leading to the degree of Bachelor of Fine Arts, Bachelor of Science in either general studies or business administration and the Master of Public Service with a major in criminal justice. The Evening College also offers the Diploma in General Studies after completion of a short formal program in liberal education designed specifically for adults.

Finally, as a community service, the Evening College organizes frequent non-credit short courses, institutes and seminars, which are tailored to the specific needs of various civic, professional and business groups.

Students may be enrolled for either individual courses or formal programs of study.

INDIVIDUAL COURSES

Admission to individual courses in the Evening College is open to all interested adults seeking to further their education. High school graduation is not required but desirable. Continued attendance is contingent upon evidence of ability to profit from the instruction offered. Advanced courses for which prerequisite courses or other experience are indicated are open only to persons who meet the stated requirements.

ADMISSION TO FORMAL PROGRAMS

Adults applying for a formal program of study in the Evening College will be required to submit records of their previous schooling prior to admission. Except under unusual circumstances applicants must possess a diploma from an accredited high school. Applicants for the Bachelor of Science degree or the Diploma in General Studies who have not attended college previously may arrange to have their high school records forwarded to the Evening College on forms supplied to them on request to the college. Adults who have attended other colleges should request that their transcripts be forwarded directly to the Evening College.

EVENING COLLEGE CATALOG

Detailed information about the Evening College is contained in a special catalog which may be requested from the director of the Evening College.

DEPARTMENTS AND COURSES*

BIOLOGY

DEPARTMENT FACULTY

Rudolph F. Nunnemacher, Ph.D., Professor of Zoology, Department Chairman
Vernon Ahmadjian, Ph.D., Professor of Botany
Joseph C. Curtis, Ph.D., Professor of Zoology
John T. Reynolds, Ph.D., Professor of Microbiology
John J. Brink, Ph.D., Associate Professor of Biochemistry
H. William Johansen, Ph.D., Associate Professor of Botany
Nicholas S. Thompson, Ph.D., Associate Professor of Psychology and Adjunct Associate Professor of Biology
Richard A. Howard, Ph.D., Assistant Professor of Geograph and Adjunct in Biology
Timothy A. Lyerla, Ph.D., Assistant Professor of Developmental Genetics
Robert G. Sherman, Ph.D., Assistant Professor of Physiology

Margaret E. Anderson-Olivo, Ph.D., Assistant Professor (Affiliate) of Physiology
George Camougis, Ph.D., Professor (Affiliate) of Physiology
Ian D.K. Halkerston, Ph.D., Professor (Affiliate) of Endocrinology
Harry L. Jacobs, Ph.D., Associate Professor (Affiliate) of Physiology
Warren Litsky, Ph.D., Professor (Affiliate) of Microbiology
Peter J. Morgane, Ph.D., Professor (Affiliate) of Neurophysiology
Fernand G. Peron, Ph.D., Professor (Affiliate) of Biochemistry; Director of Steroid Training Program
Harris Rosenkrantz, Ph.D., Professor (Affiliate) of Biochemistry

UNDERGRADUATE PROGRAM

Two majors are available. Type A is most suitable for those intending to apply for graduate studies in biology, medicine, dentistry, etc. This program is more prescribed and courses in the major must be taken for the letter grades. The Type B major allows the student to take a selection of courses in related fields of his own choosing. It is particularly suitable for those with interests spanning several departments. Courses in related fields, as indicated below, may be taken on a Pass-No Record option for the Type B major only.

A Departmental Major Type A must take 8 courses in biology of which 6 must be in courses more advanced than the introductory course. However, only 2 of the 6 courses may be in directed research, directed readings or in a seminar course. The "introductory biology year course" will be prerequisite for all other courses in biology, but students must fulfill prescribed prerequisites for specific courses.

The Type A major must take, in related fields, a year of general Chemistry, a year of introductory Physics, and at least one additional year course in chemistry, physics, or geology including in each case the laboratory for a total of 6

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*ALL COURSES ARE EQUIVALENT TO ONE COURSE IN VALUE UNLESS SO DESIGNATED.

nester or three year courses. Additionally, the Type A
jor must take a full year of the Calculus (Mathematics 12
15). None of the aforementioned courses may be taken on
'pass-no record" option.

A Type B major must take 8 courses (for letter grades) in
logy of which 6 courses must be in courses more ad-
iced than the introductory course. Only 2 of the 6 courses
y be in directed research, directed readings or in a seminar
irse. In related fields the Type B major must take a year of
ieral Chemistry, including laboratory, and 4 additional
irses chosen from Chemistry; Computer Science; English
(Darwinism); Geology; Mathematics; Philosophy 17
ilos. of Science); Physics; Psychology 222a, b
ysiology of Behavior); 224 (Human Behavior and Nervous
stem Functioning); 229b (Advanced Practicum in Physi-
gical Psychology); Sociology 12a (Social Anthropology);
any other relevant courses approved by petition.

At least 10 courses of a major's program (Type A or B)
st be taken from courses outside the field of biology,
emistry, geology, mathematics, physics, and must not
lude any of the courses specified in the preceding
agraphs.

The Department strongly advises all majors to select and
isult with an advisor for obtaining the maximum benefits
ich the department has to offer.

NORS PROGRAM

An Honors Program is available to especially well
alified majors and requires the student to engage in an
ependent research project during the senior year together
h meeting other departmental requirements, i.e., a broad
tribution of courses, quality grades, and an honors thesis
examination. Frequently the Honors Project is the
tinuation of research during the summer.

ADUATE PROGRAM

The department offers courses leading to Master of Arts
Doctor of Philosophy degrees in specialized phases of
teriology, biochemistry, botany, cytology, embroyology,
ietics, marine biology, physiology and zoology. Ad-
sion to the graduate program assumes adequate prepara-
in the basic sciences, an overall undergraduate record of
r better, and satisfactory standing in the Graduate Record
Examination. Tuition scholarships and Teaching Assistantships are available. Detailed information can be obtained from the department chairman.

MASTER OF ARTS

The program usually requires three or four semesters of academic work and includes teaching experience and research culminating in an acceptable thesis.

DOCTOR OF PHILOSOPHY

The requirements are identical with those of the University and can be found in the catalog section on The Graduate School and includes teaching experience. The student's program is planned according to his needs with his program director.

TRAINING PROGRAM FOR STEROID BIOCHEMISTRY

A Training Program for Steroid Biochemistry has been established at the University through the cooperation of the Department of Biology and the Worcester Foundation for Experimental Biology with the support of the National Cancer Institute and the U.S. Public Health Service. Post-doctoral fellowships are available for persons possessing the Ph.D., M.D., or equivalent training. Further information may be obtained from the Program Director, Dr. Fernand G. Peron.

PROGRAM IN BIOMEDICAL ENGINEERING

The Program in Biomedical Engineering is a graduate program under the joint sponsorship of Clark University and Worcester Polytechnic Institute. The aim of the program is to combine the resources of the two institutions to provide special education in this rapidly developing interdisciplinary area. Students entering the program must have a bachelor's degree in mathematics or one of the basic or engineering sciences. The master's program will include a minimum of five full courses taken at both institutions. All students will be expected to achieve some basic knowledge in biology, chemistry, engineering, mathematics and physics. Since a thesis on research is also required, the program will normally require at least two years of study. In general, the requirements for the degree will be consistent with the requirements for a master's or doctoral degree at both institutions. The detailed requirements for each student will be worked out by a Committee on Biomedical Engineering made up of faculty members from both institutions. Students enrolled at Clark will receive an M.A. or Ph.D. in Biology, the actual degree noting the cooperation of W.P.I. Conversely, students enrolled in the first instance at W.P.I. will receive the M.S. or Ph.D. in Biomedical Engineering, with the cooperation of Clark indicated on the degree.

For further information, write to: The Director, Biomedical Engineering Program, Clark University, Worcester, Massachusetts 01610.

COURSES

101b. PALEO-ZOOLOGY.

An interdepartmental course in geology and biology combining a systematic survey of the morphology, taxonomy, and geologic history of groups of animals commonly found as fossils with their evolution to present-day forms. Three lectures and one laboratory period per week including field trips.

Dr. Nunnemacher.

105a. BIOLOGY AND MAN.

An introductory survey course for non-majors. Three lectures per week.

Dr. Nunnemacher.

108. PRINCIPLES OF BIOLOGY.

A year course serving as an introduction to all advanced courses in biology. Required of all biology majors. May be entered in the Fall semester or module 3. Three lectures and one laboratory period per week.
Two courses through the year. Drs. Brink, Johansen and Staff.

109b. MICROBIOLOGY.

A survey of the protists (with emphasis on the bacteria), their activities and the methods by which they are studied. Three lectures and three hours of laboratory work per week (limited to 40 students).

Dr. Reynolds.

110a. BOTANY.

A survey of the taxonomy, structure, and physiology plants. Three lectures and one laboratory period per wee

Dr. Johanse

111b. ZOOLOGY.

A survey treating the evolution of the major animal phyla wi emphasis on structural and functional adaptations, a principles of ecology. Three lectures and one laborato period per week.

Dr. Nunnemache

112a. COMPARATIVE ANATOMY.

A comparative study of the morphology of the vertebrate with emphasis on the evolution of animals from fish to ma Prerequisite: 108. Two lectures and two laboratory period per week.

Dr. Nunneche

113a. ALGAE AND FUNGI.

Representative examples of the major groups of algae an fungi are studied with emphasis on their structure, inte relationships and adaptation to their environment. Prerequis ite: A course in botany or consent of instructor. Two three hour lecture-laboratory periods per week.

Dr. Johansen

114a. PHYCOLOGY.

Not offered, 1973-74

The structure, function and interrelationships of fresh-wate and marine algae will be studied with a view to understandin their role in the biosphere. Prerequisite: A course in botan or consent of the instructor. Three lectures and one labora tory period per week.

Dr. Johansen

115b. FLOWERING PLANTS.

An introduction to the classification, evolution, ecology, and economic importance of flowering plants, with emphasis o the New England flora. Ferns, fern-allies, and gymnosperms will also be included. Short field trips will be made to nearby areas for examination of the spring flora. A collection o plants will be encouraged but not required. One three-hou lecture-laboratory period per week.

Dr. Ahmadjian.

6b. PLANTS AND MAN.

course exploring the plants and plant products that have lped shape the development of man. Included will be cereal ops, forests and forest products, beneficial and harmful ngi, selective breeding of useful plants, historical aspects agriculture, useful and destructive aquatic plants, non-real food plants, drugs and medicinal plants, and future od supplies.

Dr. Johansen.

7a. PRINCIPLES OF ECOLOGY.

course in basic ecological theory governing organism-vironment interrelationships. Population dynamics, energy w, zoogeography, community ecology, as well as ological methods and environmental problems will be luded. Three lectures per week.

8a. GENETICS.

nciples and problems of genetics.

Dr. Lyerla.

9a. GENETICS LABORATORY.

ncurrent with 118a. One laboratory period per week.
e-quarter course Dr. Lyerla.

0b. HISTOLOGY.

e microscopic anatomy of tissues and organs of mam-ls. Prerequisite: 112. Two lectures and two laboratory riods per week.

Dr. Nunnemacher.

1. MICROTECHNIQUE.

laboratory course in the preparation of histological sec-ns. Three afternoons a week or the equivalent.

Dr. Nunnemacher.

7b. CELLULAR BIOLOGY.

e cell as a structural and functional unit. Introduction to physiochemical properties and metabolic roles of mole-les and macromolecules of cellular origin. Discussion of roles of the nucleus and cytoplasm in the regulation of lular processes. Three lectures per week. Prerequisite: ology 108 or equivalent.

Dr. Curtis.

182a. PRIMATE SOCIAL BEHAVIOR AND HUMAN EVOLUTION.

The study of the social behavior of monkeys and apes highlights central problems in psychological, zoological, and anthropolical approaches to behavior. It also has important implications for the past evolution and present nature of man's sociality (see Psychology 182).

Dr. Thompson.

183b. PRINCIPLES OF BEHAVIORAL EVOLUTION.

From a broad survey of the social systems of animals, this course will attempt to distill the general principles that have directed the evolution of animal behavior. (See Psychology 283).

Dr. Thompson.

212b. SEMINAR IN PLANT ECOLOGY.

Interactions between plants and their physical and biological environments. Prerequisite: 110 and 117 or consent of instructor.

Dr. Johansen.

213b. PLANT PHYSIOLOGY. Not offered, 1973-74

An introduction to the function and chemistry of plants. Three lectures, one laboratory period per week. Prerequisite: one course in botany and one in chemistry.

Dr. Brink & Dr. Johansen.

214b. SEMINAR IN PHYCOLOGY.

Selected topics dealing with algae from the structural, physiological or ecological points of view. Prerequisite: 110 and 113 or consent of instructor.

Dr. Johansen.

215b. INVERTEBRATE ZOOLOGY.

A detailed survey on the diversity of invertebrates. Anatomical and histological examination of selected types, concepts of evolution and speciation. Prerequisite: two semesters of biology or consent of instructor. Two lectures and two laboratory periods per week.

216a. AQUATIC FIELD ECOLOGY.

Field and laboratory experience in aquatic biology. An ecosystem analysis of a local lake. Prerequisite: 117. One lecture, three laboratory sessions per week.

217b. BIOLOGICAL OCEANOGRAPHY.

A seminar on the composition of the marine biosphere in relation to descriptive physical, chemical and geological oceanography. Two lectures per week. Prerequisite: 117 and consent of instructor.

219b. LABORATORY IN ETHOLOGY.

An introduction to observational techniques and the study of human and animal subjects. Consent of the instructor.

Dr. Thompson.

221b. EMRYOLOGY.

Consideration of the fundamentals of vertebrate embryology. Two lectures and two laboratory periods per week. Prerequisite: Biology 112 or consent of instructor.

Dr. Lyerla.

224b. NEUROANATOMY.

The structural and functional organization of the central nervous system of man. Prerequisite: Biology 112 or consent of instructor. Three lectures per week.

225a. ELECTRON MICROSCOPY.

Introduction to the principles of electron optics, use of the electron microscope, preparation of specimens and the techniques of electron microscopy applicable to biological investigations. Two lectures and two laboratory periods per week. Prerequisite: permission of the instructor.

Dr. Curtis.

228b. DEVELOPMENTAL GENETICS.

A survey of modern concepts concerning genetic control of differentiation and development. Discussions emphasize primarily metabolic controls of differential protein sythesis leading to novel cellular phenotypes in organisms from bacteriophage to man. Prerequisite: 118 or consent of instructor.

Dr. Lyerla.

230a. BIOLOGY: THE STATE OF THE ART.

A seminar for seniors and beginning graduate students who are interested in assessing the progress that has been made in approaching the outstanding questions in the biological sciences. Participants do not have to be majors in the biological sciences, but will be expected to be literate in chemistry and one or more of the sub-disciplines of biology. Discussions will be concerned with, and move out from, the various reports of the Survey Committee on the Life Sciences, a sub-committee sponsored by the National Academy of Science. Permission of instructor required. Two 75 minute meetings per week.

Dr. Reynolds.

232a. BACTERIOLOGY.

The biology of bacteria and certain related forms, with emphasis on their ecological roles. Prerequisite: Bio. 119 or its equivalent, at least one year of college level chemistry, and the consent of the instructor. Two lectures and two laboratory/discussion periods per week (limited to 20 students).

Dr. Reynolds.

232b. SELECTED TOPICS IN BACTERIOLOGY.

A seminar for advanced undergraduates and beginning graduate students. Prerequisite: At least two semesters of course work in microbiological areas, demonstrated competence in bacteriology, and consent of instructor. Two 75 minute meetings per week. SPECIAL PROBLEMS (260) may be taken concurrently for additional variable credit.

Dr. Reynolds.

235a. SEMINAR IN CELLULAR BIOLOGY.

Prerequisite: 137 or consent of instructor.

Dr. Curtis.

239b. BIOLOGICAL SYSTEMS AND WATER POLLUTION CONTROL.

An attempt to deal with those problems associated with water pollution that are amenable to solution through the application of concepts and approaches of the biological sciences. The participants do not have to be biology majors, but will be expected to be literate in one or more of the

:ientific disciplines. Permission of the instructor required. wo 75 minute meetings per week. Bio. 260 - SPECIAL ROBLEMS - may be taken concurrently for additional iriable credit.

Dr. Reynolds.

40. GENERAL ANIMAL PHYSIOLOGY.

troduction to the principles underlying physiological inctions common to living organisms. The course covers ie subcellular, cellular, and organ levels of organization and aces a primary emphasis on mammals. Prerequisites: troduction to Biology and Organic Chemistry. Three lectures and one laboratory per week.

Dr. Sherman.

42a. COMPARATIVE NIMAL PHYSIOLOGY.

Not offered, 1973-74.

47b. SEMINAR IN NEUROPHYSIOLOGY.

seminar on the principles of transmission, integration and orage of information in neuronal pathways and other onsiderations of the nervous system. Prerequisite: A course neurophysiology or its equivalent or consent of the inructor.

Dr. Sherman.

49b. PRINCIPLES OF NEUROPHYSIOLOGY.

nysiology of central and peripheral nervous systems, ceptors and muscles, considered in both vertebrates and vertebrates. Three lectures and one laboratory period per eek. Prerequisite: Biology 240 or consent of the instructor.

Dr. Sherman.

50. PRINCIPLES OF APPLIED IMMUNOLOGY.

n introduction to the basic principles, problems and ieories concerning the immunological behavior of man and ie animal kingdom, familiarizing the student with the experimental evidence upon which are based the present oncepts of immune mechanisms. The course is oriented to emonstrate the basic methods of experimental immunology ıd the application of such methods to biological problems.

Dr. Rosenkrantz.

260a,b. DIRECTED RESEARCH.

Advanced semi-independent study of an approved topic under the direction of a departmental member. Consent of instructor required. Required for honors in biology.

Staff.

261a,b. DIRECTED READINGS.

Advanced readings on an approved topic under the direction of a departmental member. Consent of the instructor required.

Staff.

268b. PRINCIPLES OF PHARMACOLOGY.

This course is intended to acquaint the student or research worker with established principles and the more important phenomena involved in the study of pharmacology. Particular emphasis is placed on the quantitative aspects of the interaction of chemical compounds or drugs with biological systems. The principal pharmacological actions of several important drugs are illustrated.

270. BIOCHEMISTRY.

The principles of mechanisms of biochemical reactions in an understanding of the metabolism of foodstuffs and the role of enzymes, nucleic acids and hormones. An acquaintance with the intrumentation in biochemical research will be presented. Prerequisite: Chemistry 13. Three lectures, one laboratory per week.

One-half course value

Dr. Brink.

271b. BIOCHEMISTRY OF NUCLEIC ACIDS.

Not offered, 1973-74

The chemical and physical properties of RNA and DNA derived from various sources will be considered with respect to their isolation, separation and characteristics. The functional role and biological significance of the nucleic acids in subcellular organelles will be examined. Prerequisite: Biology 270 or consent of instructor.

Dr. Brink.

273b. NEUROCHEMISTRY.

The metabolic aspects of brain amines and biopolymers will be considered in relation to neural function. Effects of drugs on memory processes will be discussed in terms of biochemical mechanisms. Prerequisite: Biochemistry 270 or consent of instructor.

Dr. Brink.

280a. THE HISTORY AND PRESENT STATUS OF INSTINCT.

It has long been argued and long contested that man and animal alike are guided in their social behavior by innate tendencies. This offering will emphasize the devious and irrational course of progress in a scientific field of study so loaded with social and philosophic implications. Permission of the instructor. (See Psychology 280).

Dr. Thompson.

291a. QUANTITATIVE METHODS FOR BIOLOGY.

Elements of statistical methods will be stressed. These will include hypothesis testing, design, and sampling. Also a brief introduction to computer programming and model building techniques will be included.

Dr. Howard.

292a. PLANTS, MAN, AND WATER.

The water using requirements of agricultural systems from ancient to modern times will be examined.

Dr. Howard.

293a. MODEL BUILDING TECHNIQUES.

See Geography 248.

Dr. Howard.

294. SEMINAR IN QUANTITATIVE TECHNIQUES.

Dr. Howard.

295. FOREST RESOURCE MANAGEMENT.

(See Geography 241)

Dr. Howard.

300. READINGS AND RESEARCH IN BIOLOGY.

Staff.

310. SCIENTIFIC WRITING FOR GRADUATE STUDENTS.

An introduction to the techniques of writing scientific papers. The principle assignment will be the writing of a journal article and a detailed analysis of the steps involved. Related areas which will be covered include searching the scientific literature, handling of quantitative data relevant to biological systems, and oral presentation of a scientific paper. Prerequisite: permission of the instructor.

Dr. Ahmadjian.

325a. SEMINAR IN ULTRASTRUCTURE.

Discussion of the structure of macromolecules and subcellular organelles in relation to their biological functions. Evidence obtained by a variety of physical and chemical methods will be considered, particular emphasis being placed on electron microscopic studies. Consent of instructor required.

Dr. Curtis.

332b. SEMINAR IN BACTERIOLOGY.

Selected topics in bacterial ecology and physiology. Consent of instructor required.

Dr. Reynolds.

334b. SEMINAR IN ANIMAL BEHAVIOR.

A consideration of contemporary issues in the phylogeny and ontogeny of behavior in general and social behavior in particular. (See Psychology 334).

Dr. Thompson.

335a. SEMINAR IN ENVIRONMENTAL SYSTEMS.

Systems analysis and models related to environmental management. Programming experience required. (See Geography 354).

Dr. Howard.

341a. SEMINAR IN ENDOCRINOLOGY.

Not offered, 1973-74.

Dr. Curtis.

5b. COMPARATIVE EURO-MUSCULAR SYSTEMS.

survey of the nervous and muscular systems in the inverte-ate phyla with reference to their structure and function. erequisite: 240, and consent of instructor.
Dr. Anderson-Olivo.

6. SYNAPTIC TRANSMISSION.

e electrophysiology, ultrastructure and pharmacology of emical and electrical synapses. Current information and eories of synaptic transmission as well as the role of napses in neural integration will be examined.
e-half course value Dr. Sherman.

7. CENTRAL NERVOUS SYSTEM.

e functional organization and phsyiology of selected ural networks in the central nervous system of certain ertebrate and invertebrate animals. Neuronal systems will clude the cerebellum, cerebral cortex and spinal cord of ammals and the central ganglia of molluscs and ar-ropods. In these discussions, the role of command fibers d central oscillators in initiating stereotyped behaviors and ological rhythms in lower animals will be examined.
e-half course value Dr. Sherman.

0. GRADUATE SEMINAR Staff

0. MASTER'S THESIS Staff

0. DOCTORAL DISSERTATION Staff

3b. ADVANCED MODELLING TECHNIQUES

e Geography 348). Dr. Howard.

CHEMISTRY

DEPARTMENT FACULTY

Harry C. Allen, Jr., Ph.D., Professor of Chemistry, Department Chairman
Marcel Gut, Ph.D., Professor (Affiliate) of Chemistry
Edward N. Trachtenberg, Ph.D., Professor of Chemistry
Wen-Yang Wen, Ph.D., Professor of Chemistry
Daeg S. Brenner, Ph.D., Associate Professor of Chemistry
Karen L. Erickson, Ph.D., Associate Professor of Chemistry
Robert I. Morse, Ph.D., Associate Professor of Chemistry
Allan M. Zwickel, Ph.D., Associate Professor of Chemistry
Paul T. Inglefield, Ph.D., Assistant Professor of Chemistry
Elias Meymaris, Ph.D., Assistant Professor (Affiliate) of Chemistry
Thomas A. Wittstruck, Ph.D., Assistant Professor of Chemistry

UNDERGRADUATE PROGRAM

The requirements for the chemistry major are two semester courses in mathematics beyond Mathematics 11 and eight semester courses in chemistry (and related fields) beyond Chemistry 12, 100b or 102b. In addition, two semesters of Physics, Physics 12 and 19 are required. These must include:

Course	*Number*	*Semester Course Credit*
Organic Chemistry	130a,b or 132a,b	2
Inorganic Chemistry	150	1
Physical Chemistry I	160	1
Physical Chemistry II or Biophysical Chemistry	162 or 164	1
Analytical Chemistry or Environmental Chemistry or Clinical Chemistry	170 or 172 or 174	1
	Total	6

The remaining two semester requirements may be met either by advanced chemistry courses or, with the permission of the Chemistry Department, by appropriate courses in mathematics, physics and biology.

Students wishing to be accredited by the American Chemical Society should consult the department chairman with regard to specific course requirements.

Students planning graduate study in chemistry are urged to take Chemistry 135, 200, 230 and/or advanced mathematics, physics and biochemistry courses depending on the area of interest. A reading knowledge of German, French or Russian is also recommended. All chemistry majors are encouraged to undertake independent research projects either as a candidate for honors (Chemistry 215) or in a special projects course (Chemistry 214) and may do so after completing Chemistry 160.

A student may elect as his/her first course in Chemistry — Chemistry 10, 12, 100a, 102a, 130a or 132a. The decision to start with Chemistry 12, 130a or 132a (all accelerating options) must be made in consultation with the department and may require taking a placement examination offered at the beginning of the academic year.

GRADUATE PROGRAM

The department offers programs leading to the degrees of Master of Arts and Doctor of Philosophy with specialization in various fields of chemistry and in chemical physics. Emphasis is placed on tailoring programs to fit the specific needs and desires of the graduate student. To facilitate this goal, a committee of interested faculty works with each student to advise and review his progress in research work and together with the student defines the formal course work requirements. In the case of Master's degree candidates the requirements are essentially those of the University as stated elsewhere in the catalog. Up to one year's equivalent of teaching apprenticeship will be required of all candidates for advanced degrees.

In addition to formal course work, the student must pass qualifying and preliminary examinations and the Department language requirement must be met. For further details, the appropriate Departmental publications should be consulted.

Graduate scholarships, teaching assistantships and research fellowships are available. Further information of these awards may be obtained from the department chairman.

COURSES

1b. THE ROLE OF CHEMISTRY IN SOLVING NATIONAL PROBLEMS.

This course is primarily for non-science majors. Among the national problems to be discussed are air and wate pollution, solid waste disposal, mineral supply, urban renewal, transportation, land reclamation and health. One hour seminar per week.

One-quarter course value — Dr. Allen

10. CHEMISTRY FOR NON-SCIENCE MAJORS.

This one semester, relatively non-mathematical course on the fundamentals of chemistry is intended to develop a qualitative feeling about chemistry and its role in the modern world. Although not designed for science majors, students who do develop a deeper interest in chemistry can, without loss of time, enter Chemistry 12 or Chemistry 132a (with the extra recitation). Three lectures and one 3-hour laboratory per week.

Dr. Wittstruck

12. FUNDAMENTALS OF CHEMISTRY.

Offered every semester.

This one semester, mathematical course on the major principles of chemistry, which is at the same level of sophistication as Chemistry 100 or 102, is designed to accelerate students whose high school background in chemistry is sufficiently good so that they do not require a full year of General Chemistry in order to qualify for Organic Chemistry. Three lectures and one 4-hour laboratory per week.

Dr. Trachtenberg.

100a,b. INTRODUCTORY CHEMISTRY.

This systematic study of the elements and their principal compounds and of the fundamental laws and theories of chemistry is designed for chemistry majors and for those interested in biology, medicine and dentistry. It will, therefore, tend to emphasize optional topics related to biological, clinical and nutritional chemistry. Three lectures, one recitation and one 4-hour laboratory per week. Enrollment limited to 65.

Two course value. — Dr. Inglefield.

02a,b. GENERAL CHEMISTRY.

his systematic study of the elements and their principal ompounds and of the fundamental laws and theories of hemistry differs from Chemistry 100 only in that it is esigned more as a liberalizing experience for those who do ot plan to go on to more advanced courses in chemistry. herefore, there will be greater emphasis on the chemistry of arbon; additional emphasis will be on ecological, eological, nuclear and environmental problems. Three ctures, one recitation and one 4-hour laboratory per week. nrollment limited to 65.
wo course value. Dr. Zwickel.

30a,b. ORGANIC CHEMISTRY.

he lectures emphasize the synthesis and reactions of ganic compounds, structure determination and reaction echanisms. The laboratory concentrates on the preparation nd physical, spectral, and chemical properties of important asses of organic compounds. Prerequisite: Chemistry 12 or 0b or 102b or advanced placement. Three lectures and one hour laboratory per week.
wo course value. Dr. Erickson.

32a,b. ORGANIC CHEMISTRY.

his course is identical to Chemistry 130a,b except that it egins in February and is additionally open to students who ther have completed Chemistry 10 or who *almost* qualify for dvanced placement on the basis of examination. Such udents are required to attend an additional recitation ession each week reviewing topics in general chemistry. hree lectures and one 4-hour laboratory per week.
wo course value. Dr. Trachtenberg.

35. QUALITATIVE ORGANIC ANALYSIS.

aboratory study of the identification of organic compounds y both classical and modern instrumental techniques. rerequisite: Chemistry 130b or 132b or consent of the inructor. One hour conference and seven hours of laboratory er week.

Dr. Erickson.

140. ANALYTICAL CHEMISTRY.

This course covers both the theoretical principles and technical methods employed in determining the composition of matter. Two lectures and six laboratory hours per week. Pre- or corequisite: 162b.

Dr. Wittstruck.

142. ENVIRONMENTAL CHEMISTRY.

This study focuses on the chemistry related to environmental problems such as air and water pollution from fossil fuels, pesticides, metals, food additives and solid wastes. The laboratory primarily will make use of analytical techniques. Prerequisites: Chemistry 130 of Chemistry 132. Three lectures and one laboratory per week.

Dr. Allen.

144. CLINICAL CHEMISTRY. Not offered, 1973-74.

This quantitative analysis course places emphasis on chemical and instrumental analysis of molecules of clinical or biochemical interest. Two lectures and six laboratory hours per week. Prerequisite: Chemistry 100 or 102.

Dr. Morse.

150. INORGANIC CHEMISTRY.

Descriptive chemistry of the elements. Prerequisite: Chemistry 12 or 100b or 102b or equivalent. Two lectures and one 4-hour laboratory per week.

Dr. Zwickel.

160. PHYSICAL CHEMISTRY I.

The lectures cover principles of physical chemistry applied to gases, liquids and solids; chemical thermodynamics; solution chemistry. The laboratory includes experiments in physical chemistry techniques of measurement and technical report writing. Prerequisite: Mathematics 12 or either Chemistry 12, 100b or 102b. Chemistry 130 or 132 is suggested as a pre- or corequisite. Pre- or corequisite: Physics 12 or a strong high school background in physics and enrollment in the recitation part of this course. Three lectures, one 4-hour laboratory and one optional recitation per week.

Dr. Wen.

162. PHYSICAL CHEMISTRY II.

Electrode processes, chemical kinetics and atomic and molecular spectroscopy. Prerequisite: Chemistry 160. Three lectures and one 4-hour laboratory per week.

Dr. Wen.

164. BIOPHYSICAL CHEMISTRY.

A rigorous course in physical chemistry offered as an alternative to Chemistry 162 with emphasis on the physical chemistry of biological systems; enzyme kinetics, spectroscopy of biological systems, macromolecules, transport processes, x-ray diffraction. Prerequisite: Chemistry 160. Three lectures and one 4-hour laboratory per week.

Dr. Wen.

173. MATHEMATICS FOR CHEMISTS.

Not offered, 1973-74.

Series, Fourier series, special functions, Fourier transforms, matrices. Two lectures per week and independent work.

Variable credit. Dr. Morse.

200. PHYSICAL CHEMISTRY III.

Elementary quantum-mechanical treatment of the structure of nuclei, atoms and molecules. Three lectures and one discussion per week. Prerequisites: Chemistry 160 and 162 or 164.

Dr. Allen.

210. PHYSICAL CHEMISTRY IV.

The application of group theory to problems of chemical interest such as molecular vibrations, hybrid orbitals and molecular orbital theory. Three lectures and one discussion per week. Prerequisite: Chemistry 200 or equivalent.

Dr. Allen.

214. SPECIAL PROJECTS.

Individual investigation involving laboratory and/or literature research.

One course each semester. Staff.

215. HONORS COURSE.

Primarily for majors seeking departmental honors in chemistry. A laboratory research project and participation in departmental seminar.

One course each semester. Staff.

230. PHYSICAL ORGANIC CHEMISTRY.

This is a lecture course on the fundamentals of organic chemistry including molecular structure, acidity and basicity, kinetics and mechanisms with emphasis on the most recent advances in organic chemical theory. Prerequisites: Chemistry 130b or 132b, 160 or consent of the instructor.

Dr. Trachtenberg.

242. NUCLEAR SCIENCE.

Fundamentals of nuclear chemistry and physics; production, isolation, identification and measurement of radioactive atoms. Three lectures and three laboratory hours per week. Prerequisite: consent of the instructor.

Dr. Brenner.

280. INSTRUMENT METHODS.

Not offered, 1973-74.

The principles and application of modern instrumental techniques to the separation and analysis of mixtures and for the characterization of pure compounds. Two lectures and six laboratory hours per week. Prerequisite: consent of the instructor.

Dr. Brenner.

300. RESEARCH.

One to four courses each semester. Staff.

312. INORGANIC CHEMISTRY.

Not offered, 1973-74.

Theoretical and descriptive inorganic chemistry. Prerequisite: consent of the instructor.

Dr. Zwickel.

322. THERMODYNAMICS.

Not offered, 1973-74.

Applications of classical thermodynamics to chemical systems.

Dr. Brenner.

23. STATISTICAL CHEMISTRY.

tatistical mechanical analogs of thermodynamic functions nd their application to chemical systems. Prerequisite: onsent of the instructor.

Dr. Wen.

33. SYNTHETIC ORGANIC CHEMISTRY.

ectures on synthesis of organic molecules emphasizing cope and limitations of general methods, mechanism and ereochemistry. Synthesis of carbon to carbon bonds, xidation and reduction. Prerequisite: Chemistry 230, or onsent of the instructor. Offered in alternate years.

Dr. Erickson.

35. NATURAL PRODUCTS. Not offered, 1973-74.

e chemistry of selected naturally occurring compounds. tructure determination, sythesis, mechanistic interpretation f exotic transformations, and biogenetic theory. rerequisite: consent of the instructor. Offered in alternate ears.

Dr. Erickson.

40. QUANTUM CHEMISTRY. Not offered, 1973-74.

lementary quantum mechanics of simple systems, roperties of wave functions, approximation methods for omplex systems.

Dr. Morse.

41. ADVANCED UANTUM CHEMISTRY. Not offered, 1973-74.

pproximation methods, atomic states, spectroscopy and olecular methods. Prerequisite: Chemistry 340 or consent f the instructor.

Dr. Morse.

44. SELECTED TOPICS IN ADVANCED UCLEAR CHEMISTRY. Not offered, 1973-74.

iscussion of current experimental and theoretical literature n nuclear reactions, fission, and nuclear spectroscopy. Preequisite: Chemistry 242 or equivalent.

Dr. Brenner.

350. SEMINAR.

Reports on research work and discussions of recently published work.

No credit. Guest Lecturers, Staff and Graduate Students.

360. COORDINATION COMPOUNDS Not offered, 1973-74.

Chemical and physical properties of complexes: theories of coordination, stereoisomerism, reaction mechanisms and solution stabilities. Offered in alternate years.

Dr. Zwickel.

361. MOLECULAR STRUCTURE.

Physical methods relevant to the determination of the structure of molecules (x-ray, electron diffraction, magnetic resonance, electronic properties, etc.). Prerequisite: consent of the instructor. Offered in alternate years.

Dr. Inglefield.

369. ELECTRONIC SPECTROSCOPY.

Introduction to the studies of ultraviolet and visible absorption spectra as well as emission spectra. Prerequisite: consent of the instructor. Offered in alternate years.

Dr. Wen.

379. SPECIAL TOPICS.

Research seminars; reports by graduate students.

Staff.

380. RESEARCH CONFERENCE.

Informal reports of research work being done in the laboratory.

No credit. Staff and Graduate Students.

COMPUTER SCIENCE

The courses in the area of Computer Science listed below are available to Clark students. They involve the use of the IBM 1130 Computing System located on campus. For other Computer Science courses see the Worcester Tech catalog.

101a. INTRODUCTION TO COMPUTER PROGRAMMING.

An introductory programming course designed for students with no mathematics beyond high school algebra. The fundamentals of the FORTRAN IV programming language are introduced. Students develop a working knowledge and understanding of number representation and arithmetic, arrays and indexing, character representation and manipulation, subprogram definition and parameter passing, loaders and assemblers, various algorithms, and an overview of third generation computers.

Mr. Larson.

102b. COMPUTER APPLICATIONS.

The topics of storage and retrieval, file design, simulation, queuing, sorting, and computer graphics are covered. Several projects requiring programming skills are assigned. Prerequisite: Computer Science 101 or consent of instructor.

Mr. Larson.

140a. ASSEMBLER LANGUAGE PROGRAMMING.

This course is designed to enable the student to write substantive programs in assembler language for the IBM 1130. While a knowledge of a higher level language is not necessary, some familiarity with computer operations would be helpful. Otherwise, permission of the instructor is required.

Mr. Page.

201b. ADVANCED COMPUTER PROGRAMMING.

This course is designed for students with previous programming experience. Each student is expected to select and carry to completion a project requiring substantive computer analysis in machine language, assembler, or any higher level language.

Dr. Howard, Mr. Larson.

GEOGRAPHY 295b. COMPUTER GRAPHICS.

MATHEMATICS 135. PATTERN RECOGNITION.

ECONOMICS

DEPARTMENT FACULTY

Roger C. Van Tassel, Ph.D., Professor of Economics, Department Chairman
James A. Maxwell, Ph.D., Professor of Economics, Emeritus
Howard W. Nicholson, Ph.D., Professor of Economics
David Ott, Ph.D., Professor of Economics
Attiat Ott, Ph.D., Professor of Economics
George E. Hargest, M.B.A., Associate Professor of Economics, Emeritus
Frank W. Puffer, Ph.D., Associate Professor of Economics
Peter Sloane, Ph.D., Associate Professor of Economics and Education
Alan F. Gummerson, Ph.D., Assistant Professor of Economics
Donald E. Wise, Ph.D., Assistant Professor of Economics
Robert C. Hsu, Ph.D., Assistant Professor of Economics
Yoo, Jang H., Assistant Professor of Economics

UNDERGRADUATE PROGRAM

The undergraduate program is designed to give the student a comprehensive grasp of the underlying principles and functions of economic institutions, and to develop habits of systematic thought. Economics 11 is a prerequisite to most courses in Economics. Majors in Economics are required to take Economics 205a and 205b (Micro and Macro) and are strongly advised to take Economics 160, Introduction to Statistical Method. Students planning on graduate study in Economics are advised to elect courses in Economic

Theory, Statistics and Econometrics, and Mathematics. Prerequisites for the M.B.A. degree may be completed as part of the undergraduate major.

At least 9 semester courses in economics are required plus a minimum of 3 courses selected from related departments.

Candidates for departmental honors may engage in a program of independent study off-campus during one semester of the junior year. These students may work for business firms or government agencies in applied economic research and receive academic credit.

Some advanced courses may be offered only in alternative years. Detailed course descriptions are available at the department office and at the Registrar's office.

GRADUATE PROGRAM

The University offers facilities for graduate study and research leading to the Master of Arts degree and Doctor of Philosophy degree in Economics and with the cooperation of the Department of Management, to the Master of Arts in Applied Economics.

Graduate students may elect to take a limited amount of work in related courses offered by other departments.

Scholarships and fellowships are available for a limited number of well-prepared students. These appointments exempt their holders from tuition fees and some carry stipends in varying amounts. Several teaching assistantships are also awarded which enable graduate students to gain experience in undergraduate instruction. These carry remission of tuition and a cash payment, up to $3,000 for part-time work (one-half).

MASTER OF ARTS PROGRAM

Students interested in the application of economics to operational situations in business and government are encourage to enroll in the M.A. program in applied economics. This program is built around a core of economic theory and econometrics plus a choice of applied business fields, actual on-site research — consulting experience, and a thesis. With adequate prerequisites full-time students can complete this program in one year.

Students enrolled in the Ph.D. program may be awarded the M.A. degree upon satisfactory completion of the Ph.D. oral examination; or, in the case of students who do not continue toward the Ph.D., upon satisfactory completion of an approved program of 24 semester hours of course work, the writing of an M.A. thesis and an oral examination.

A student should discuss his plans with the graduate student advisor on or before Registration Day and secure approval of his course program.

DOCTOR OF PHILOSOPHY PROGRAM

Two full academic years of graduate work, or its equivalent in part-time work, is necessary for admission to Ph.D. candidacy. One of these years must be spent in residence at Clark University. In residence is broadly defined as work done at Clark University under the immediate personal supervision of at least one member of the University faculty. For the degree of Doctor of Philosophy, twenty-four semester hours is a normal full-time program.

All candidates for the Ph.D. in Economics are required to demonstrate proficiency in Econometrics and Mathematical Economics, i.e., by passing designated courses offered in the Department or, in the case of prior preparation, by passing a test given by the Department.

Each student in the Ph.D. program is required to demonstrate proficiency in Economic Theory. The Economic Theory requirement includes Micro-theory, Macro-theory and the History of Doctrine. Use of mathematics may be required in the examination in Economic Theory. The student satisfies the Economic Theory requirement by passing course examinations usually at the end of the first year of graduate study. During the second year of study students will take a written comprehensive examination.

Upon completion of the Economics Theory, the comprehensive examination, and other required preparations, and after the student passes a written examination in his three special fields, he is admitted to candidacy for the Ph.D. These fields may be selected from among the following: Money and Banking, Public Finance, Industrial Organization, International Trade, Labor, Regional Economics, Econometrics, Advanced Theory or one field selected from related subjects. If Econometrics or Advanced Theory is selected as a special field, the level of performance required is substantially higher than the general requirement in Econometrics and Economic Theory for all Ph.D. candidates. The choice of fields must be cleared in advance with the graduate student advisor. Field courses are typically offered on alternate years. Soon after having passed the field exams, each student is expected to make a presentation before an informal conference with his dissertation committee demonstrating *both* the extent of his knowledge, of his dissertation field and the feasibility of the proposal topic.

Upon completion of the Dissertation in a form acceptable to his committee, the candidate will provide a copy of the Dissertation to the Department, the staff and graduate students in the department. After a period of approximately two weeks, to permit a wider reading of the Dissertation within the department, the candidate will present his Dissertation at a seminar open to all staff and graduate students in the Department. Final approval of the Dissertation will be granted by the committee after consideration of any suggestion of changes or challenges arising from the final seminar. Unless the Dissertation is completed and defended within five calendar years from admission to candidacy, the certifying examinations must be repassed.

The dissertation must be a real contribution to knowledge, based upon independent research, convincingly presented, and acceptably written.

Some teaching experience at Clark or such other teaching as the Department may regard as equivalent, is prerequisite to the Doctor's degree.

COURSES

11. PRINCIPLES OF ECONOMICS.

Open to freshmen. One semester course offered both semesters. Multiple sections.

Staff.

12b. CONTEMORARY ECONOMICS.

Open to Freshmen.

This course permits the non-economics major to develop a working knowledge of current economic problems. Readings which require very limited technical skill or knowledge are assigned. Students are expected to participate actively in discussions. Prerequisite: Economics 11.

Staff.

113. MONETARY ECONOMIC THEORY & POLICY.

The theory of money, its role in the modern economy. Determinants of the supply of money and analysis of the role of monetary policy in stabilization policy.

Dr. D. Ott.

115. PUBLIC EXPENDITURES.

Issues of priorities in the composition and size of public expenditures. Evaluation of the Federal budget (expenditures and revenues) according to criteria of efficiency, equity and administrability. Examination of goals of employment, price stability, and growth and role of fiscal policy instruments in achieving them.

Dr. A. Ott.

116. TAX SYSTEMS AND POLICIES.

The course outlines federal taxes and tax policies in the United States. It explains emerging issues in federal taxation — tax equity, the effect on income distribution, the relative tax burden of the rich and the poor and tax reforms, and discusses alternative solutions. Taxes as a tool for economic stabilization and growth are also analyzed.

Dr. A. Ott.

126. PUBLIC POLICIES TOWARD BUSINESS.

Open to Freshmen.

A study of the problems of use of governmental power to promote or to discourage particular economic behavior. Topics include Antitrust regulation; legislation to protect consumers, and examples of government programs supplementing the market.

Dr. Nicholson.

142. ECONOMICS OF UNDERDEVELOPED REGIONS

Not offered, 1973-74.

An analysis of underdeveloped nations. Economic, cultural, social, and political factors that have an importance in economic development. Prerequisite: Economics 11.

Dr. Gummerson.

150. CRITIQUES OF THE AMERICAN ECONOMY.

Course will examine radical critiques of U.S. econony. A neo-Marxist analysis will provide an overview followed by in-depth examinations of alleged U.S. economic imperialism, the extent of the economy's dependence on military spending, and the nature of income distribution and poverty in the U.S.

Dr. Gummerson.

160. INTRODUCTION TO STATISTICAL ANALYSIS.

Basic concepts and techniques of statistical method in economic analysis: descriptive statistics; permutation and combination; an introduction to probability theory; sampling distribution; standardized normal distribution and other related distributions; simple and multiple regression; simple forecasting and statistical decision-making.

Dr. Yoo.

177. THE CHINESE ECONOMY.

The economic policies, organization, performance, and structural changes in Mainland China in the twentieth century, with special emphasis on the post-1949 period.

Dr. Hsu.

176. COMPARATIVE ECONOMIC SYSTEMS.

A survey of the theoretical models and actual workings of major contemporary economic systems: Mixed economies, market socialist economy and centrally planned economy.

Dr. Hsu.

204. ECONOMIC EDUCATION.

Designed to analyze and evaluate the content, structure and ools of social science curricula at the elementary and secondary levels. Emphasis will be upon innovative, interdisciplinary programs incorporating economic concepts. The objective will be to design experimental projects for testing under classroom conditions. Two semesters.

Dr. Sloane.

205a. INTERMEDIATE ECONOMIC THEORY.

An analysis of contemporary theory.

Dr. Gummerson.

205b. ECONOMIC THEORY — INTERMEDIATE.

A study of contemporary theory.

Dr. A. Ott.

206a. APPLIED MICRO ECONOMICS.

This course is designed to incorporate micro-economic theory with estimation and simulation. The material centers around the operation of the firm and the implementation of economic techniques in managerial decision making. Topics include: market demand; cost output relationships; pricing policies; retail store location and industrial dynamics. Prerequisite: Fortran Programming. One course.

Dr. Wise.

206b. APPLIED MACRO ECONOMIC THEORY.

The development and use of macro-economic theory in such areas as economic forecasting, business cycle analysis and input output studies. Emphasis will be placed on the relationships between individual industries and the national economy.

Dr. Puffer.

207. INTERNATIONAL ECONOMICS.

Development of International Trade Theory, the balance of payments, adjustment, and the theory of commercial policy.

Dr. Van Tassel and Dr. Hsu.

208. INTERNATIONAL ECONOMIC PROBLEMS.

The International financial system: evolution, problems, solutions, Commerical policy, international investment, and other contemporary issues. Joint student-staff research projects.

Dr. Van Tassel and Dr. Hsu.

222. LABOR AND MANPOWER.

A survey of the nature of labor economics and labor problems, including the several approaches of organized workers and employers to these problems.

Dr. Wise.

224. HISTORY OF ECONOMIC DOCTRINE.

Beginning with brief survey of ancient writers, medieval schoolmen and mercantilist authors, this course focuses on the evolution of economic analysis from the time of classical writers to the 1960's and stresses developments in methods by which man has attempted to better understand economic phenomena.

Dr. Nicholson.

260a. APPLIED STATISTICS.

Application of statistics and basic econometric techniques to managerial problems: time trend analysis; analysis of the seasonal variation; cyclical movement of economic variables; method of seasonal adjustment; spectoral analysis; Bayesian analysis; various distributions; and hypothesis testing. Prerequisite: Economics 160, Management 203, or equivalent.

Dr. Yoo.

260b. APPLIED ECONOMETRICS.

Integration of statistical concepts with the estimation and forecasting of economic variables: estimation of production function; cost analysis; quality analysis; linear programming; input-output method; estimation of aggregate supply and demand function; model for national economy. Prerequisite: Econ 160 or 260a.

Dr. Yoo.

261. PROGRAMMING FOR ECONOMISTS.

Introduction to FORTRAN programming with emphasis on the use of the computer in economic research and analysis.

Dr. Puffer.

271a,b. INTRODUCTION TO MATHEMATICAL ECONOMICS.

An introductory survey of the use of mathematical methods in economic analysis. Special attention is given to the mathematical framework of the theory of price determination. Prerequisite: consent of the instructor.

Dr. Nicholson.

272b. MATHEMATICAL ECONOMICS.

Not offered, 1973-74.

Mathematical approach to Microeconomic Theory including general equilibrium. Intended for advanced undergraduate students with some knowledge of calculus and linear algebra. This course may be taken in lieu of Economics 205a. Prerequisite: consent of instructor.

Staff.

277a. REGIONAL ECONOMICS.

Not offered, 1973-74.

Theoretical and practical aspects of economic development, cyclical changes and trade between regions of the United States. Location theory, growth trends, wage and income differentials, structural unemployment and inequalities in income distribution are considered. Interregional input-output tables emphasized. Prerequisite: Economics 11, or one advanced economics course.

Dr. Moody.

277b. PROBLEMS IN REGIONAL ECONOMICS.

Not offered, 1973-74.

The application of regional econometric theory and regional resource management to problems in regions in the United States.

Dr. Moody.

280. JUNIOR HONORS.

Designed to assist honors candidates in integration of the field.

Staff.

281. SENIOR HONORS

Each semester.

Staff.

282. HONORS.

Eligible students selected by the department may work off campus for a summer and a semester as junior professional Economists in business, government, or industry and receive full academic credit for a semester's work.

Staff.

301a,b. ECONOMIC THEORY, MICRO-ECONOMICS.

See graduate student advisor for list of seminars offered and current topic coverage. The theory courses are offered each year. Special field seminars are offered in response to student interest.

Dr. Ott and Dr. Wise.

302a,b. ECONOMIC THEORY — MACRO.

A study of the variables of macroeconomics. Prerequisite: consent of instructor.

Dr. D. Ott and Dr. Yoo.

313a,b. SEMINAR IN MONETARY ECONOMICS.

Dr. D. Ott.

322a,b. LABOR SEMINAR.

Dr. Wise.

325a,b. PUBLIC FINANCE SEMINAR.

Not offered, 1973-74.

Dr. A. Ott.

326a,b. INDUSTRIAL ORGANIZATION SEMINAR. Not offered, 1973-74.

Mr. Nicholson.

327a,b. INTERNATIONAL TRADE SEMINAR.

Dr. Van Tassel.

328a. ECONOMIC DEVELOPMENT.

Not offered, 1973-74.

Dr. Hsu.

377a,b. REGIONAL SEMINAR. Not offered, 1973-74.

Dr. Moody.

390a,b. ECONOMETRICS SEMINAR. Not offered, 1973-74.

The application of statistical techniques to the verification of economic postulates and problems. Topics considered are: he linear normal regression model, single equation econometric problems, simultaneous equation estimating echniques, spectral analysis and factor analysis. Preequisite: consent of instructor.

Staff.

EDUCATION

DEPARTMENT FACULTY

William C. Kvaraceus, Ed.D., Professor of Education and Sociology; Department Chairman
Allan E. Guskin, Ph.D., Acting President and Adjunct Professor of Education and Sociology
Helen J. Kenney, Ed.D., Professor of Education
David Zern, Ph.D., Associate Professor of Education and Adjunct Assistant Professor of Psychology
Richard P. Boardman, Ed.D., Assistant Professor of Educational Sociology
Judith T. Guskin, Ph.D., Assistant Professor of Education
Mitchell P. Lichtenberg, Ph.D., Affiliate Assistant Professor of Education
Peter E. Sloane, Ph.D., Associate Professor of Economics and Education
Irving A. Schwartz, M.A., Assistant Professor of Education and Clinical Instructor in Social Studies, Program Director, Training Complex Project
Marcia A. Savage, Ed.D., Assistant Professor of Education
William E. Topkin, Ed.D., Assistant Professor of Education
Lawrence Bader, Ph.D., Affiliate Assistant Professor of Education
Eleanor R. Moosey, Ed.D., Affiliate Assistant Professor of Education
Spencer R. Potter, Ed.D., Lecturer in Education
Ronald L. Chapman, M.A. Ed., Lecturer in Education

With the cooperation of Professor Schatzberg and Professor Reid of the Department of Language and Literature; Professor Silverman and Professor Tepper of the Department of Mathematics; Professor Ford of the Department of History; Professor Warman and Professor Knos of the Graduate School of Geography; Professor Beck of the Department of Philosophy; Clinical Instructors in English, Victoria Trachtenberg and Alan Laufman; Clinical Instructors in Elementary Education, Barbara Kohin, Hessa Miller, and Deborah Zern.

UNDERGRADUATE PROGRAM

The department encourages all students who may be interested in preparing for careers in education to consult with some member of its staff early in their careers at the University. During the first two years, students should complete as many of the specific requirements for the degree of Bachelor of Arts as possible, and lay a broad foundation of scholarship in the subjects in which they wish to specialize. However, a limited set of experimental courses has been made available for selected freshmen and sophomores. Special permission is usually required for entree to education courses taken at the undergraduate level. Generally, the actual election of courses in education should be postponed until the junior year.

In conformity with its policy of emphasizing the importance of scholarly background, the department offers its courses as electives, and not as undergraduate majors.

However, to enable those students contemplating teaching careers the Department provides an internship in the senior year as a transition to professional study at the graduate level, and for entry into beginning teaching positions. The internship module is limited to seniors who have completed major requirements at a satisfactory level of scholarship. Most interns carry their internship for a 12 to 15 credit block during either the first and second moduls or the third and fourth module of their senior year. Decision to elect the internship module must be made before the end of the junior year, and must be approved by the Department of Education and reviewed by academic departments for competency in subject matter areas.

A special sequence of courses sponsored jointly by the Clark Training Complex Project, the Department of Education, and several academic departments is designed to provide an opportunity for a limited number of undergraduates interested in a career in teaching to participate in a diversified four-year training sequence. A series of seminars, led by a doctoral candidate in the Clark Department of Education's Social/Educational Analyst Program, and assisted by a Training Complex cadre teacher and a post-internship senior, provides the opportunity to discuss and define issues, to process and analyze data, and to propose solutions to sociologically defined problems, curricular problems, and psychological guidance problems.

GRADUATE PROGRAM

The department offers one program leading to the degree of Master of Arts in Education and another leading to the degree of Doctor of Education.

Master of Arts in Education: For graduate students wishing to prepare for work within the area of early childhood care and education the department offers a fifth-year program leading to the degree of Master of Arts in Education.

Admission Requirements: In addition to the general admission requirements to the Graduate School, a personal interview is usually required by the Department of Education.

Programs Available: Three programs leading to the degree of Master of Arts in Education are available:

1. A full or part time program in early childhood care and education for students with a bachelor's degree and strong academic background. Superior students may complete this program in one year. It includes advanced work in the academic fields and internship experiences.
2. A transitional program in educational analysis leading to doctoral work in educational psychology and educational sociology.
3. Extended Training for certified teachers.

PROGRAM REQUIREMENTS:

1. *Courses:* for further details on course requirements, consult the Department of Education.

2. *Internships:* The department provides opportunities for an extended internship experience under supervision for all graduate students.

3. *Thesis or Additional Study in Lieu of Thesis:* All candidates for the degree of Master of Arts in Education must choose one of the following plans:

(a) Prepare an acceptable thesis.

(b) Elect, in lieu of thesis, two additional semester courses.

(c) Elect, in lieu of thesis, a seminar in which intensive work will be required in preparing and presenting reports before fellow graduate students and a member of the staff.

4. *Final oral examination:* The passing of a final oral examination will be required of all candidates.

Doctor of Education: A new and specialized program for the degree of Doctor of Education has been established. Two directions for study lead to the doctoral degree in the areas of Social or Educational Analysis. These specialties differ in the scope of their concern. The social analyst studies the structure and functions of social systems and their educational implications. The educational analyst focuses his attention on the individual learner and the school as a learning environment. Both programs stress assessment and research.

There are four major components to this doctoral program: (1) *Social Science Foundations.* Depending upon the individual student's orientation, he will pursue an extended program relating psychological or sociological perspectives to issues in education. All students will be expected to acquire some expertise in both foundation fields that will be examined through a variety of learning experiences, including integrative field studies; (2) *Educational Process.* Students will acquire or otherwise demonstrate an appropriate level of competence in understanding and applying bases and criteria involved in curriculum decisions, development, and implementation; (3) *Research and Evaluation.* All students will be expected to demonstrate or otherwise acquire an appropriate level of competence in statistical procedures and research design; and (4) *Consultation and Group Dynamics.* All students will be expected to participate in specific experiences aimed at developing the interpersonal skills needed to work effectively with small groups and to develop effective supervisory and consulting techniques.

The formal course of study is periodically evaluated through individual assessments including the required preliminary exams. The design and preparation of a dissertation is the final requirement of the program offering the student the opportunity to study in depth a topic of specific concern to him.

Applicants for admission to the program will be expected to give evidence of high scholarly achievement and leadership promise in their chosen field. Other evidence of potential such as results from Graduate Record Examinations, Miller Analogies, etc. may be required. Potential candidates are encouraged to sit in on graduate classes and otherwise familiarize themselves with the graduate program before completing formal application procedures. Personal interviews with staff of the Department will then be required before applications are acted upon. In special cases, foreign students may be excused from the Examination and interview requirement.

The department admits to graduate work only those students who plan to enroll in the Ed.D. program on a full-time basis. A residence requirement demands a minimum of full-time study (not less than 24 semester hours credit beyond the master's degree). The student is required to pass his course work with distinction. The number of courses to be taken is determined through consultation with the student's individual advisor, but generally calls for four or five semesters of full-time study beyond the master's program. Language requirements in the Department are optional and relate to the student's background and future professional goals.

COURSES

101a,b. FRESHMAN PRACTICUM: SOCIOLOGICALLY DEFINED STUDY.

Open to 9 freshmen each semester with permission of the Department of Education.

Mr. Schwartz.

102a,b. SOPHOMORE PRACTICUM: PSYCHOLOGICALLY DEFINED STUDY.

Open to 9 sophomores each semester with permission of Department of Education.

Mr. Schwartz.

103a,b. JUNIOR PRACTICUM: CURRICULUM STUDY.

Open to 9 juniors each semester with permission of Department of Education.

Mr. Schwartz.

150a. SEMINAR IN METHODS AND MATERIALS IN MATHEMATICS TEACHING AT THE SECONDARY LEVEL.

Mr. Tepper.

200a,b. GEOGRAPHY IN EDUCATION.

Refer to description under Geography 100a and b.

Dr. Warman.

201a. EDUCATIONAL PSYCHOLOGY: CHILD GROWTH AND DEVELOPMENT.

Principles of child development with emphasis upon maturation, learning and personality development in the elementary school years. Recommended for those planning to take Internship Module.

Dr. Savage.

201b. EDUCATIONAL PSYCHOLOGY: ADOLESCENT GROWTH AND DEVELOPMENT.

Principles of adolescent development with special emphasis upon learning and personality development in the secondary school years. Recommended for those planning to take Internship Module.

Mr. Chapman.

201b. EDUCATIONAL PSYCHOLOGY.

An introduction to some contemporary issues in education and an overview of theoretical and research literature which may give insight into developmental and educational processes. The emphasis will be on "why" (within the framework of educational settings) rather than "how to". Recommended for those planning to take the internship module. (Will be offered second semester and fifth module.)

Dr. Guskin.

203a. CURRICULUM DEVELOPMENT & ANALYSIS IN GEOGRAPHY & HISTORY.

See Geography and History.

204a,b. ECONOMIC EDUCATION: ELEMENTARY SCHOOL.

Designed to analyze and evaluate the content, structure and tools of social science curricula at the elementary and secondary levels. Emphasis will be upon innovative, interdisciplinary programs incorporating economic concepts. The objective will be to design experimental projects for testing under classroom conditions.

Dr. Sloane.

205a. METHODS OF TEACHING AND RESEARCH IN EDUCATIONAL SYSTEMS.

See Geography.

206a. AUTOBIOGRAPHY WORKSHOP.

See Geography.

217a,b. INTERNSHIP TEACHING.

An intensive period of observation and teaching in the field or fields in which the student plans to teach. Individual supervision is given by the department and by teachers in cooperating schools. Admission on consent of the Department.

Two course value. Dr. Lichtenberg, Staff and Co-operating Teachers.

218a,b. POST-PRACTICUM SEMINAR.

Mr. Schwartz.

222b. ATTENTION AND ATTACHMENT: ISSUES IN INFANT CARE.

The attention processes and the attachment behaviors of the infant will be emphasized in this course on the first years of life. Both theoretical and research literature will be analyzed. Direct observations of infants and relevant films will also be utilized.

Dr. Zern.

224a. TRAINING COMPLEX WORKSHOP IN CURRICULUM DEVELOPMENT.

This workshop is designed to develop a broader conception of curriculum than the one generally held at present. Eight public school teachers and eight Clark undergraduates, prospective teachers will explore the idea of curriculum as transaction, with emphasis on the substantive, psychological, interpersonal and environmental implications of curriculum for teaching/learning. The main focus of the workshop will be an examination of the problem of autobiography in its essential and existential dimensions, and its translation by the participants into curricular activity.

Mr. Schwartz.

225a,b. TRAINING COMPLEX SEMINAR.

A seminar which brings together Clark student-teachers and teachers from cooperating schools in the Worcester area to discuss problems, describe strategies, and share techniques related to their student-teacher/cooperating teacher experience. The group will continue to explore and evaluate the translation and application fo autobiographical approaches to teaching and learning.

Mr. Schwartz.

233a,b. METHODS AND MATERIALS FOR ELEMENTARY SCHOOL SOCIAL STUDIES.

Investigates materials and methods used in elementary school social studies programs. Offered concurrently with the Internship Module in Education.

Dr. Lichtenberg.

234. FIELD PROJECTS.

Provides individualized and extended experiences in a wide variety of agencies and institutions involving the education and comprehensive care of children and youth. Supervision is provided by the University and field agency personnel; combines related seminars and conferences as a basis for critical analysis of the experiences within the context of applied theory and practice.

Variable course value. Dr. Kenney, Dr. Kvaraceus & Staff.

242b. EMOTIONAL PROBLEMS AND SCHOOL LEARNING.

Considers the psychodynamics of emotional disturbance in children and adolescents, diagnostic and remediation techniques, and various educational approaches. Involves practicum experiences with disturbed children.

Dr. Kenney.

250a. SCHOOL AND COMMUNITY.

An investigation of the school and community relationship ncluding parent and teacher associations, citizens groups, school committees, community schools and schools as communities.

Dr. Boardman.

251a. AMERICAN YOUTH IN SCHOOL AND SOCIETY.

Not offered, 1973-74.

Considers the role, development, and education of youth with special consideration of youth's involvement in the changing school system and other youth-serving agencies and institutions.

Dr. Kvaraceus.

260a. LINGUISTICS AND LANGUAGE LEARNING.

Not offered, 1973-74.

(Also designated Linguistics 260a)

An exploration of various fields of linguistic study from the point of view of their relevance to foreign language learning. ntended to meet the needs of two classes of students: (1) prospective foreign language teachers who already have advanced mastery of their foreign language; and (2) other students with a more general interest in the nature of anguage, whose primary orientation may be toward related problems in, for example, psycholinguistics or socioinguistics. Approaching language as *behavior* and as *system*, the course directs attention to the levels ranging from the culture-system to the system of the language as a whole, and finally to its sub-systems: lexical, grammatical and phonological. Offered in alternate years. Consent of the nstructor required.

Mr. Reid.

272b. SEMINARS IN STUDENT TEACHING.

One-half course value. Dr. Lichtenberg, Dr. Kenney & Staff.

273b. SEMINAR IN METHODS AND CURRICULUM IN MATHEMATICS TEACHING AT THE SECONDARY LEVEL.

Mr. Tepper.

280b. JUVENILE DELINQUENCY AND THE SCHOOL.

Considers the role of the school as a central agency in the prevention and control of norm-violating behavior.

Dr. Kvaraceus.

282a. INTRODUCTION TO INSTRUCTION AND CURRICULUM DEVELOPMENT AT THE SECONDARY LEVEL.

An introduction to the fundamentals of the instructional process and curriculum planning at the secondary school level. The first two-thirds of the course will concentrate on various modes of teaching. The last third will cover principles of curriculum development for specific subject fields.

Dr. Lichtenberg.

285b. ELEMENTS OF DIAGNOSTIC PRESCRIPTIVE TEACHING.

Planning individual instruction with classroom application. One-half course value. TBA.

287a,b. INTERNSHIP MODULE IN EDUCATION.

The internship provides an intensive work-study experience in elementary and secondary schools and other educational agencies in the Worcester area. It involves theoretical course work; a full-time supervised work experience in schools or in some other educational, welfare, and recreation agency; and related workshops, seminars, and conferences.

At the elementary level the module provides full credit in the following areas: student teaching (two full courses including the professional teaching seminar covering two modules) with the remainder of the three half-courses over two modules distributed according to individual student needs among units covering curriculum development, methods and materials of instruction, and test and measurement.

The internship offers a wide variety of specialized learning opportunities to meet the different interests and backgrounds of the students. These include experiences in educational testing and diagnosis, educational research, curriculum construction and experimentation and school administration as well as in classroom teaching and individual tutoring.

The internship at the secondary school level is spread over two semesters and may be taken via the Training Complex or through the inter-department design as arranged with the Departments of Mathematics, English, Foreign Language and Literature, Science, History, and Geography.

Limited to seniors who will have completed major requirements and whose grade point average reflects high level of scholarship. Students contemplating internships must make application during their junior year.

Variable — Dr. Kenney, Staff and
Three or four full course value — Cooperating Teachers.

288b. SOCIOLINGUISTICS.

Crossdisciplinary perspectives on language behavior, communicative competence, attitudes, and socio-cultural variations as they affect individuals, groups, and societies. A modest study will be designed and carried out by the students.

Dr. Guskin.

289b. FIELD OBSERVATION: COGNITIVE AND SOCIAL-INTERPERSONAL BEHAVIOR IN THE CLASSROOM SETTING.

Illustration of various cognitive and social-interpersonal models of human behavior in the classroom setting. Special consideration will be given to the work of Freud, Piaget, Skinner, Wertheimer, Lewin, and F. Kluckhohn. Students will carry out field observations, and formulate and execute their own individual projects. Same course as Psych. 219b.

Dr. Zern.

290b. PHILOSOPHY OF EDUCATION.

The aims, processes and materials of education with special reference to the influence of philosophical ideas on educational problems.

Dr. Beck.

293a. WORKSHOP IN SECONDARY ENGLISH CURRICULUM.

Refer to description under English 293a.

Mrs. Trachtenberg & Mr. Laufman.

294b. MATERIALS AND METHODS IN TEACHING SECONDARY ENGLISH.

Refer to description under English 294b.

Mrs. Trachtenberg & Mr. Laufman.

297a. PATTERNS OF CHILD-REARING: A CROSS-CULTURAL ANALYSIS.

Analysis of various sub-cultural and cross-cultural patterns of child-rearing, dealing with both similarities and differences within the human species. The materials for this consideration will be both theoretical (particular emphasis on Freud and F. Kluckhohn) and descriptive ("case studies" of such as Walden II, day care and higher education, and the kibbutz).

Dr. Zern.

298a. PRE-SCHOOL EDUCATION I: THEORY AND PRACTICE.

Not offered, 1973-74.

Detailed consideration of day-to-day functioning in the classroom. The rationale behind the various specific techniques will be considered in detail.

TBA.

299a. PRE-SCHOOL EDUCATION II: PRACTICUM.

Not offered, 1973-74.

Concurrent with 298a. A practicum experience of 10-12 hours/week in various pre-school child care centers.

TBA.

303a,b. HUMAN LEARNING AND INSTRUCTION.

Analysis of basic psychological approaches (primarily Freud, Skinner and Wertheimer) to the issues involved in human learning and instruction. Application of these perspectives to the particular situation of the classroom will be considered both during and after the theoretical positions.

Dr. Zern.

304b. ADVANCED CURRICULUM AND INSTRUCTIONAL SYSTEMS.

Considers the theoretical underpinnings of curriculum and examines various instructional methodologies in detail.

Dr. Lichtenberg.

305a,b. GROUP PROCESS IN EDUCATION.

A two-semester course designed to provide an opportunity to learn more about interpersonal behavior and group dynamics. Using data generated from within the class, we will pay attention to issues that are central to group dynamics, e.g., how norms are established, in what manner decisions are made, and the roles assumed by individuals. Consideration will be given to the application of group dynamics to the field of education. Readings are drawn from a field of group work and self-analytic groups. Prerequisite: Permission of instructor — Limited to 12 students.
Two course value. Dr. Bader.

306a. SUPERVISION OF FIELD PROJECTS.

A one-semester course which offers clinical supervision of work experiences for doctoral students in their field placements. Readings will include both theory and research on change — for individuals, groups, and institutions.

Dr. Bader.

307b. ORGANIZATIONAL CHANGE IN SCHOOLS.

Organizational issues involved in understanding, researching, and implementing planned educational change. Case studies will be used extensively.

Dr. Guskin.

308a,b. ANALYSIS AND SUPERVISION OF INSTRUCTIONAL INTERACTION.

Examines both the theoretical and applied aspects of supervision and analysis of interactions in educational settings.

Dr. Lichtenberg.

311a. PRINCIPLES AND PRACTICES OF GUIDANCE.

Within a rationale for pupil services, consideration will be given to the day-to-day functioning of the so-called guidance counselor — his work within the structure of the school system as well as his coordination of services within the school with those of community service agencies.

Dr. Potter.

314a. TESTS AND EVALUATION: THEORY AND TECHNIQUES OF MEASUREMENT AND APPRAISAL.

The methods and problems involved in the evaluation of abilities, interests, and achievement of children and youth, both by standardized instruments and by special purpose measures.

Dr. Kenney & Dr. Kvaraceus.

314a,b. TESTS AND EVALUATION: PRACTICA.

Dr. Kenney & Dr. Kvaraceus.

317a,b. INDIVIDUAL ASSESSMENT OF MENTAL ABILITIES.

Theory and intensive experience in administering and interpreting individual tests of intelligence with major emphasis on Stanford-Binet Revision and Wechsler Intelligence Scales. Emphasizes mechanics of administration and interpretation for use of test results in educational settings.

a. TBA; b. Dr. Moosey.

320b. SEMINAR IN THE SOCIOLOGY OF EDUCATION.

An in-depth consideration of a major issue in education informed by discussion and consideration of relevant literature.

Dr. Boardman.

323b. THE ORGANIZATION AND MANAGEMENT OF PROGRAMS FOR YOUNG CHILDREN I: THEORY AND PRACTICE.

Classroom analysis of the following areas: (1) legislation at the federal, state, and local level (2) the utilization of the agency network (3) the organizational structure and dynamics of the child care agency (4) staffing and in-service training (5) budgeting and cost analysis.

To be announced.

324b. THE ORGANIZATION AND MANAGEMENT OF PROGRAMS FOR YOUNG CHILDREN II: PRACTICUM.

Concurrent with 323b. A practicum experience as an assistant to a day care center administrator, involving 10-12 hours/week.

To be announced.

327b. SCHOOL CONSULTATION: ISSUES AND PROBLEMS.

A one-semester course which will provide an opportunity to focus on the models of, problems in, and strategies for consultative intervention. Readings will be drawn from the area of consultation in school systems.

Dr. Bader.

331a. RESEARCH TOOLS AND TESTS.

An introduction to the development of questionnaires and interview techniques coupled with and examination of test validation procedures.

Dr. Boardman.

331b. STATISTICS IN EDUCATIONAL RESEARCH.

An introduction to the descriptive, parametric and non-parametric statistical tests used in educational research.

Dr. Boardman.

336a. LANGUAGE AND COGNITIVE DEVELOPMENT.

Will investigate the language acquisition process, the relationships between language and cognitive development (emphasizing the two to seven year old period), and the effects of dialect and cultural variations on communication processes and learning in educational settings. Theoretical issues and research literature will be analyzed and a modest study will be designed and carried out by the students.

Dr. Guskin.

337a. THE SCHOOL AS A SOCIAL SYSTEM.

An examination of some of the classical sociological literature on education including works by Durkheim, Ward, Warner, Hollingshead, Hunter, Duncan, Parsons and others.

Dr. Boardman.

341a. SOCIAL-PSYCHOLOGICAL ISSUES IN EDUCATION.

A consideration of selected issues in American education from the point of view of psychological and sociological perspectives. Planned particularly for entering doctoral candidates — others with permission.

Dr. Judith Guskin, Dr. Alan Guskin and Staff.

343a. ANALYSIS OF THE RESEARCH PROCESS.

A critical examination of the nature of the research enterprise conducted primarily through an analysis of the strengths and weaknesses of existing research in the social sciences focussed on educational issues. Planned for doctoral students — others with permission.

Dr. Zern.

344b. RESEARCH DESIGN.

Analysis and implementation of skills necessary for the construction of adequate hypothesis-testing procedures. The class will function on a case-history approach: developing particular designs to deal with particular educational issues across a wide array of orientations.

Dr. Zern.

349a,b. ANTHROPOLOGICAL APPROACHES IN EDUCATION.

Views the schools and learning as containing their own society and culture in dynamic relationship to the surrounding culture and society. Not offered 1973-74.

350. SOCIOLOGY OF TEACHING AND LEARNING.

A comprehensive examination of some of the best research and the most important findings in the sociology of teaching and learning.

Dr. Boardman.

379a,b. ADVANCED GRADUATE INTERNSHIP IN EDUCATION.

Staff.

380b. DEPARTMENTAL SEMINAR ON CONTEMPORARY EDUCATIONAL PROBLEMS AND ISSUES.

For master's degree candidates who are not writing a thesis. Requires a major paper.

Dr. Kvaraceus and Staff.

GRADUATE READINGS AND THESIS COURSES

38. DIRECTED READINGS IN EDUCATIONAL PSYCHOLOGY.

381. THESIS. Staff.

37. DIRECTED READINGS IN EDUCATIONAL SOCIOLOGY.

371. THESIS. Staff.

ENGLISH

DEPARTMENT FACULTY

William H. Carter, Jr. Ph.D., Professor of English, Department Chairman
Karl O. E. Anderson, Ph.D., Professor of English
James F. Beard, Jr., Ph.D., Professor of English
Charles S. Blinderman, Ph.D., Professor of English
James Macris, Ph.D., Professor of English and Linguistics
Stanley Sultan, Ph.D., Professor of English
Jessie C. Cunningham, Ph.D., Associate Professor of English
Serena S. Hilsinger, Ph.D., Associate Professor of English
David H. Abraham, Ph.D., Assistant Professor of English
James P. Elliot, Ph.D., Assistant Professor of English
Bernard W. Bell, Ph.D., Visiting Professor of English, First Semester
Arthur F. Kinney, Ph.D., Affiliate Associate Professor of English

UNDERGRADUATE PROGRAM

An undergraduate major in English and American Literature is expected to acquire a liberal education with a broad background in the arts and sciences. To do so, he should become familiar with several fields in the humanities, the social sciences, mathematics, and the sciences; and insofar as is possible, he should attempt to achieve depth in at least one area outside his major field. On becoming a major, the student should consult with the Chairman about choosing an advisor and should thereafter discuss his program with his advisor at each registration period.

ENGLISH

The English major must take at least eight full courses (sixteen modules) in literature other than English 16, 17, 18, and 19. In addition, he must take a minimum of four full courses (eight modules) of related courses in other fields, as specified under *Related Courses* below.

LITERATURE COURSES

I. The minimum requirement of 8 full courses (16 modules) of literature must include:

A. English 10a or b (a prerequisite for all other literature courses offered by the Department, except for students with a score of three or better on Advanced Placement or students who have satisfactorily passed the Placement Test given by the Clark English Department). English 10 is to be taken preferably in the freshman year and no later than the sophomore year.

B. Two of the following, normally taken before the senior year: English 13 (a or b), English 14 (a and b), English 15 (a and b), English 111 (a and b). (Students will not be permitted to combine single semesters of English 14, 15, 111 in meeting this requirement.)

C. A minimum of three full courses (6 modules) in courses or seminars at the 200-level.

II. To make sure that students develop some historical perspective and an awareness of the range and variety of English and American literature, all English majors must include in their programs at least:

A. Three full courses (6 modules) dealing with literature written before 1700 (for example, English 15a, 200b, 203b, 206b, 212a, 212b, 215b, 220a, 222b, 224b).

B. Three full courses (6 modules) dealing with literature written from 1700 to 1900 (for example, English 13, 14a, 14b, 15b, 111a, 111b, 226a, 226b, 236b, 238b, 239a, 242a, 242b, 244a, 245b, 247b, 248b, 249a, 250b).

Students should note that certain courses may be counted towards *two* of these requirements (for example, if one takes English 14a and b to satisfy half of requirement I.B., he may also use these two one-semester courses to meet two-thirds of requirement II.B.).

Courses in Foreign Literature. A student may count any of the courses listed under "Comparative Literature" towards the English major.

Related Courses. The minimum of four full courses (8 modules) of related courses required of the English major must include 2 full courses (4 modules) of History and two full courses (2 modules) of philosophy.

Courses Recommended Outside the Major and Related Fields. Like all undergraduates, the English major must elect at least nine full courses (18 modules) outside his major and its related fields. These courses must be selected from the offerings of the following Departments: Biology, Chemistry, Economics, Education, Fine Arts, Geography, Geology, German, Government and International Relations, Linguistics, Mathematics, Music, Physics, Psychology, Romance Languages, Russian, Sociology, Theatre Art.

Those students who intend to go on to graduate school should be aware that a reading knowledge of French, German, and Latin is frequently required of doctoral candidates.

Honors Program. Majors are encouraged to apply in the spring of their sophomore year to participate in the Honors Program in English. Further information is available from the Department.

Cooperative Programs. The range of English offerings open to Clark students has been extended by the establishment of a cooperative arrangement with the English Departments at Assumption College and the College of the Holy Cross. With the permission of the Department, majors and graduate students may take a few carefully selected courses in literature at these institutions. Another Consortium program that may be of interest is listed under "Theatre Art."

GRADUATE PROGRAM

The University offers a program leading to the Master of Arts degree in English. A limited number of scholarships providing tuition remission are available for superior students. The Department also offers several teaching assistantships, involving half-time teaching and half-time study, with stipends ranging up to $3,000, plus the remission of tuition.

For the Master of Arts, the student must satisfactorily complete at least eight full courses (16 modules) of work, including English 300a (Introduction to Graduate Studies), or English 280b (or one of the following courses in the systematic study of language — English 282b. Seminar: Old English; Linguistics 285a. Semantics; Linguistics 287a. Introduction to Linguistics; English 288b. Comparative and Historical Linguistics), and at least one semester one seminar. He must also write an acceptable master's thesis, English 350 (which with an associated reading course, English 349, will count as two of the eight full courses required); he must pass a written Foreign Language Examination (in Greek, Latin, French, German, Italian, Russian, Spanish, or another foreign language approved by the Department); and he must pass a final oral examination.

COURSES*

*Please note that we have renumbered our 200-level courses; the old numbers appear in parentheses after the course titles.

10a,b. INTRODUCTION TO LITERATURE.

This course deals with the problems common to all the literary genres — such as the handling of diction, imagery, point of view, tone, and structure — but each section has its own set of readings focused on a particular concept or theme. Students will be permitted to make their own choices of section as far as possible. Offered both semesters.

Staff.

13a,b. INTRODUCTION TO POETRY.

A course designed to combine consideration of the nature and range of English poetry with extensive experience in the study and discussion of individual poems. Offered both semesters.

First semester, Dr. Hilsinger;
Second semester, Dr. Carter and Dr. Hilsinger.

14. ENGLISH NOVEL.

A study of the English novel from its beginning to the end of the nineteenth century. The first semester includes Defoe, Richardson, Fielding, Smollett, Sterne, Jane Austen, and three or four minor novelists. The second semester considers Scott, Thackeray, Dickens, George Eliot, James, Hardy, Conrad, and two or three minor novelists. Some emphasis is placed on the development of the novel as a literary form.

Dr. Cunningham.

15. ENGLISH DRAMA.

A course in the major periods of English drama before the twentieth century. The first semester covers medieval religious drama and the drama of Tudor and Stuart England. The second semester covers British drama from 1660 to the earlier twentieth century.

Dr. Abraham.

16a. CREATIVE WRITING. Not offered, 1973-74.

A course designed to cultivate and guide student work particularly in the short story, the lyric poem, and the informal essay. Class meetings deal largely with important aspects of the art of fiction; published literary works and student manuscripts are discussed. Not open to freshmen. Prerequisite: a one-semester course in literature.

Mr. Guarnera.

17b. CREATIVE WRITING: SECOND COURSE.

Open to students who have taken English 16 and to other students interested in writing verse. Prerequisite: the same as for English 16.

Dr. Sultan.

F18a,b. EXPOSITORY WRITING.

This course is designed to help students improve their expository writing through the study and application of rhetorical methods. Diction, sentence structure, paragraph integrity, theme organization, logic, semantics, persuasion, the relationship of idea to expression and of expression to audience are among the matters analyzed. Offered both semesters.

Staff.

19b. INTERMEDIATE COMPOSITION.

This course is designed to help those who have already acquired competence in expository writing to improve their style and effectiveness through practical experience. Special emphasis will be placed on stylistics, techniques of persuasion, and methods of organization through the study of works of established essayists and the close analysis of student papers. Enrollment limited to fifteen students. Offered at the discretion of the Department. Prerequisite: English 18 and consent of the instructor.

Dr. Blinderman.

88. DIRECTED READINGS.

Variable credit. Staff.

90. SPECIAL PROJECTS.

Variable credit. Staff.

111. AMERICAN LITERATURE.

Through study of representative masterworks, the course traces the main currents of American literature from Puritan times to the present. Authors read during the first semester include Sewall, Edwards, Franklin, Cooper, Poe, Hawthorne, Thoreau, Emerson, and Melville; during the second semester, Whitman, Twain, Howells, Dickinson, Adams, Crane, James, Frost, Eliot, Faulkner and Hemingway.

First semester, Mr. Elliott; Second semester, Mr. Beard.

120b. LITERATURE AND LIBERATION.

This course will study the way literature reflects and determines the position of women in societies from ancient Greece to modern suburbia. Offered at the discretion of the Department.

Dr. Blinderman.

129. MODERN DRAMA.

A survey, with special emphasis on several major figures, of drama from Ibsen to the present. The first semester traces the development of naturalism, the emergence of modern realistic drama and early reactions to realism. The second semester covers the period from World War II to the present and examines several of the major post-war movements and some of the non-dramatic forms which they have produced.

Dr. Abraham.

143b. MODERN BRITISH FICTION.

The course deals primarily with the work of four twentieth-century British writers of fiction: Joyce, Lawrence, Woolf and Durrell.

Dr. Hilsinger.

144a. MODERN AMERICAN FICTION.

A critical introduction to the best American fiction from about 1900 to 1960, with emphasis on its aesthetic values, sociological insights, and philosophical implications. Authors read include Dreiser, James, Anderson, Fitzgerald, Hemingway, Capote, Faulkner, Ellison and Mailer.

Dr. Beard.

146b. LITERATURE OF THE SIXTIES.

The course will be a survey of contemporary British and American fiction and poetry. Writers to be considered might include Burgess, Hawkes, Golding, Barth, Mailer, Malamud, Bellow, Heller, Vonnegut and representative modern British and American poets.

Dr. Elliott.

150a. LITERATURE OF WESTERN CIVILIZATION.

A study of literature basic to the cultural development of western civilization; selections range in subject from mythology to political science, in type from epic poem to the essay, and in time from Greek antiquity to the Renaissance. Offered at the discretion of the Department.

Dr. Blinderman.

155b. SEMINAR: THE MYTHOPOETIC MODE.

This seminar explores the vision and epistemology of mythopoetic literature. Works read and discussed include Shakespear's *Henriad*, Milton's *Paradise Lost*, Bronte's *Wuthering Heights*, Melville's *Moby Dick*, and Eliot's *Four Quartets*. Candidates for honors in English should elect this seminar in their junior year. Prerequisite: consent of the instructor.

Dr. Hilsinger.

156. HONORS IN ENGLISH: SENIOR YEAR.

Staff.

200b. SEMINAR: OLD NORSE SAGAS [200b].

A study of the major works written during the great flowering of literature in medieval Iceland, with particular emphasis on the Old Norse sagas. All works will be read in translation, but interested students will be given an opportunity to learn Old Norse. Offered at the discretion of the Department.

Dr. Anderson.

203a. MEDIEVAL LITERATURE [202b].

A study of the literature of Western Europe before 1500. The works read include epics such as *Beowulf, The Song of Roland, The Nibelungenlied*, and the *Njal's Saga;* historical writings and folk tales important in the development of the Arthur story; romances such as *Perceval, Tristan and Isolde,* and *Gawain and the Green Knight;* Dante's *Divine Comedy; Inferno;* selections from Chaucer's *Canterbury Tales.*

Dr. Anderson.

206b. SEMINAR: CHAUCER [201b].

Not offered, 1973-74.

An introduction to Middle English grammar, pronunciation, and scansion, and a study of *Troilus and Criseide* and the best of the *Canterbury Tales,* followed by a more rapid reading of at least three of Chaucer's earlier works, such as *The Book of the Duchess, The House of Fame, The Parliament of Fowls,* and *The Legend of Good Women.* Prerequisite: consent of the instructor.

Dr. Anderson.

212. SHAKESPEARE [213].

Approximately twenty plays, with supplementary critical essays, are read through the year as a basis for a study of Shakespeare's development as a dramatist and his changing attitude toward life. The second semester is devoted mainly to a careful analysis of *Hamlet, Othello, Lear, Macbeth* and *Antony and Cleopatra.*

Dr. Anderson.

214a. SEMINAR: SPECIAL STUDIES IN SHAKESPEARE [315a, 305a].

Not offered, 1973-74.

A detailed study of selected problems of interpretation and evaluation, with wide reading in critical material and general background. Independent and original study is emphasized. Offered at the discretion of the Department. Prerequisite: English 212 (Shakespeare) and consent of the instructor.

Dr. Anderson.

215b. SEMINAR: SPECIAL STUDIES IN RENAISSANCE DRAMA [206b].

Not offered, 1973-74.

A seminar devoted to the intensive study of a small group of dramatists or a special dramatic problem of the Renaissance. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

220a. SEMINAR: SEVENTEENTH CENTURY [204a].

A study of selected Metaphysical and Cavalier poets, masterpieces of seventeenth century prose, and the rise of English neo-classicism. Offered in alternate years. Prerequisite: consent of the instructor.

Mr. Carter.

222b. SEMINAR: MILTON [204b].

An intensive reading of Milton's poems and selected prose. Offered in alternate years. Prerequisite: consent of the instructor.

Dr. Carter.

224b. SEMINAR: THE RADICAL MODE OF RESTORATION COMEDY.

An investigation of the radical aspects of Restoration Comedy, including among other things, its exclusiveness, its anti-establishment posture, and its preoccupation with sexuality and perversion. Parallels will be drawn to some other radical dramatic movements, such as the Theatre of Cruelty and the contemporary Black theatre. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Full course, two modules. Mr. Abraham.

226. SEMINARS: EIGHTEENTH CENTURY [205]. Not offered, 1973-74.

During the first semester, prose works such as Defoe's *Moll Flanders* and Swift's *Gulliver's Travels,* plays such as Gay's *Beggar's Opera* and Lillo's *London Merchant,* and the major poems of Pope and Swift are considered. During the second semester, prose works by Boswell and Johnson; novels by Richardson, Fielding, Smollet, Sterne; plays by Fielding, Goldsmith, Sheridan; and poetry by Thomson, Collins, Gray, Burns and Blake are studied. Offered in alternate years. Prerequisite: consent of the instructor.

Dr. Carter.

236. LITERATURE OF THE ROMANTIC PERIOD. [217] First semester only, 1973-74.

To define Romanticism. the course will focus primarily on selected writings of English Romantic poets, but it will also study American and Continental works both of the Romantic period and of modern times. A collaborative effort will be made by instructor and students to correlate Romantic attitudes of the past, as expressed by such figures as Keats and Byron, with Romantic attitudes of the psychedelic present. Offered in alternate years.

Dr. Schachterle.

238b. SEMINAR: WILLIAM BLAKE [218b]. Not offered, 1973-74.

An analysis of the poems and of a selection of the Prophetic Books of Blake, including some consideration of Blake as graphic artist. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Carter.

239a. SEMINAR: AMERICAN LITERARY RENAISSANCE [212a]. Not offered, 1973-74.

This course will explore characteristic writings of Emerson, Thoreau, Hawthorne, Melville, and Whitman; consider their personal and literary interrelations; and seek to evaluate their artistic and cultural influences in the larger context of American society. Prerequisite: consent of the instructor.

Dr. Beard.

242. VICTORIAN LITERATURE [210]. Not offered, 1973-74.

A study of Victorian values and major intellectual movements as expressed in literature. The first semester concentrates on the Idea of Duty (transcendental, utilitarian, Catholic, Darwinian, and Dickensian); the second on the Idea of Decadence (from the Pre-Raphaelites to Beardsley). Offered in alternate years.

Dr. Blinderman.

244a. SEMINAR: ROMANTIC AND VICTORIAN GOTHIC [216a].

The seminar will call forth the Gothic spirit from its incarnations in architecture, painting, and literature — graveyard poetry, Gothic novels, *Frankenstein.* Films and field trip.

Dr. Blinderman.

245b. SEMINAR: DARWINISM [214a]. Not offered, 1973-74.

This seminar, of an interdisciplinary nature, is devoted to the study of original and research materials elucidating the scientific, philosophical, religious and social dimensions of Darwinism. The course examines chiefly the survival of the fittest Darwinian ideas in English and American literature. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Blinderman.

247a. SEMINAR: DICKENS [219b].

This seminar will consider Dickens as a humorist, an artist, and a social critic in the light of his time and its relevance to ours. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Cunningham.

248b. SEMINAR: THE BRONTES AND HARDY [230a].

A study of selected poetry and fiction of Charlotte, Emily and Anne Bronte and of Thomas Hardy: their dramatic affinities, their cosmic vision, their literacy techniques. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Cunningham.

249a. SEMINAR: TWAIN, HOWELLS AND JAMES [211a].

The course will explore the artistic assumptions and impulses underlying American Realism through selected novels and criticism of America's three greatest realistic novelists. Some attention will also be given to DeForrest, Jewett, Frederic and some writers of tall tales. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Elliott.

253b. SEMINAR: MODERN AMERICAN DRAMA.

An examination of significant movements, figures, and plays in the development of twentieth-century American drama. Dramatists studied include O'Neill, Behrman, Odets, Anderson, Miller, Williams, and Albee. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Beard.

254b. SEMINAR: NATURALISM IN AMERICAN FICTION [226b].

A study of naturalism in representative American fiction and criticism, the course will consider selected works of Garland, Crane, London, Norris, Dreiser, Farrell and Steinbeck. Offered at the discretion of the Department. Prerequisite: permission of the instructor.

Dr. Elliott.

256a. SEMINAR: THE IRISH DRAMATIC TRADITION.

This course will explore the striking continuity of Irish themes in drama, from the Restoration to the modern period. While much time will be devoted to close readings of plays by Yeats, Synge, and O'Casey, special attention will be given, as well, to the definition of some peculiarly Irish characteristics of other playwrights with Irish backgrounds, such as Congreve, Farquhar, Sheridan, Wilde, O'Neill, and Beckett. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Abraham.

257b. SEMINAR: THE IRISH LITERARY REVIVAL [231b].

Not offered, 1973-74.

A course in the inception, development and effect of the literary movement during the end of the last century and the first decades of this one that created an Irish literature in English. Writers studied include Yeats, Joyce, Synge and O'Casey. The cultural, historical and political backgrounds of Anglo-Irish literature are also studied. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Sultan.

258b. SEMINAR: CONRAD, LAWRENCE AND JOYCE [232b].

This course deals with the development and accomplishment in the genres of the short story and the novel of three major writers of fiction of the twentieth century. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Sultan.

259a. MODERNIST POETRY [220a].

A survey, with special attention to the genesis and development of modernism and to tendencies during the last few years toward a dominant new movement in English poetry. The works of almost fifty poets, ranging in time from Emily Dickinson to Robert Creeley, are considered. Offered in alternate years.

Dr. Sultan.

262a. SEMINAR: FIVE TWENTIETH-CENTURY POETS [222a]. Not offered, 1973-74.

A seminar in the lyric poetry of Yeats, Eliot, Auden, Thomas, and a poet selected by the class, for students who have taken English 259 (Modernist Poetry) or the equivalent. Offered in alternate years. Prerequisite: consent of the instructor.

Dr. Sultan.

264a. SEMINAR: T. S. ELIOT.

An intensive study of the major poems, plays and critical essays of T.S. Eliot. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Hilsinger.

265a. SEMINAR: BLOOMSBURY GROUP [235a].

This seminar will consider the aesthetic and social theories expressed in the novels of Virginia Woolf and E. M. Forster and in the essays of these and other members of the Bloomsbury Circle. Prerequisite: consent of the instructor.

Dr. Hilsinger.

267a. SEMINAR: SPECIAL STUDIES IN TWENTIETH-CENTURY AMERICAN LITERATURE [225b].

A seminar devoted to the intensive study of a twentieth-century writer or small group of writers — Hemingway and Faulkner in 1973. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Beard.

269a. BLACK AMERICAN POETRY.

The aim of this course is two-fold: to introduce the student to the tradition of Afro-American poetry and to examine the influence of the Black aesthetic movement on poetry of the 1960's. The course will involve mini-lectures, class discussion, tapes of poets, two oral critiques of poems, two short (750-1500 words) papers, and group project. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Bell.

277b. SEMINAR: MODERN CONTINENTAL FICTION [245b]. Not offered, 1973-74.

Masterpieces by modern European novelists (Flaubert, Turgenev, Tolstoy, Dostoyevsky, Gide, Proust, Mann, Kafka and Camus) are studied in translation, with special attention to their formal philosophical, moral, social, political, and psychological values. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Beard.

291b. SEMINAR: THE CONCEPT OF TRAGEDY [207b].

Through the study of approximately twenty plays, three novels, and a number of poems, from the Greek and Hebrew origins of Western Culture to the present time, this course analyzes the nature of tragedy, the changes which this concept has undergone, the relation of these changes to shifting views of man and the universe, and the significance of the study of tragedy to us today. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Anderson.

293a. WORKSHOP IN SECONDARY ENGLISH CURRICULUM.

A study of new approaches to English curriculum and preparation for practice teaching (visiting schools, observing classes, some apprentice teaching and tutoring, and work sessions with cooperating teachers).

Mrs. Trachtenberg and Mr. Laufman.

294b. MATERIALS AND METHODS IN TEACHING SECONDARY ENGLISH.

Review and application of specific materials and techniques in the teaching of writing and poetry. A seminar involving student interns, specialists, and experienced teachers.

Mrs. Trachtenberg and Mr. Laufman.

295b. TEACHING ENGLISH AS A SECOND LANGUAGE.

This course covers the principles and practice of second language teaching, with emphasis on the application of modern linguistics to the teaching of English as a second language. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Macris.

300a. INTRODUCTION TO GRADUATE STUDIES.

This course is devoted to an intensive general study of the three principal areas in the discipline — bibliography and textual analysis, literary history, and literary criticism — and to the relationships among them. In the study of literary criticism, alternative theoretical approaches and applications of them are examined. Prerequisite: consent of the instructor.

Dr. Sultan.

301b. SEMINAR: CHAUCER. Not offered, 1973-74.

A detailed study of selected problems of interpretation and evaluation, with wide reading in critical material and general background. Independent and original study is emphasized. Offered at the discretion of the Department. Prerequisites: English 206b (Chaucer) and consent of the instructor.

Dr. Anderson.

349. READING COURSE FOR MASTER'S THESIS [31].

Prerequisite: consent of Chairman or Director of Graduate Studies.

Staff.

350. MASTER'S THESIS. [310].

Prerequisite: consent of Chairman or Director of Graduate Studies.

Staff.

388. GRADUATE DIRECTED READINGS.

Variable credit.

Staff.

LINGUISTICS

Linguistics 115. MAN AND LANGUAGE.

Refer to description under Linguistics Department.

Dr. Reid.

Linguistics 260a. LINGUISTICS AND LANGUAGE LEARNING.

Refer to description under Linguistics Department.

Dr. Reid.

English 280. HISTORY OF THE ENGLISH LANGUAGE [250].

The first semester deals with the development of the phonology and lexicon of English, viewed as a dynamic series of systems. The course also describes the homeland, language, and culture of the Proto-Indo-Europeans as background for a treatment of the structural relationships between English and other languages of the Indo-European family. The second semester concentrates on the deveopment of the grammar of English, also treated dynamically and systemically. The course includes an analysis of the establishment of Standard British English, the doctrine of correctness, and the growth of Modern American English in its sociocultural setting. Prerequisite: consent of the instructor. Only the first half of this course will be offered in 1973-74.

Dr. Macris.

English 282b. SEMINAR: OLD ENGLISH [255b].

An introduction to Old English language and literature. The works read include King Alfred's preface to Pope Gregory's *Pastoral Care* and selections from the West Saxon Gospels, from the Old English translation of the Heptateuch, from Aelfric's *Colloquy,* from the Anglo-Saxon Chronicle, and from the Old English translation of Bede's *Historia Ecclesiastica Gentis Anglorum.* Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Macris.

English 284b. SEMINAR: MODERN AMERICAN ENGLISH [260b] Not offered, 1973-74.

This seminar analyzes the grammatical structure of Modern American English. It concentrates on an evaluation system for handling spoken and written English and the application of this system to problems of current English usage. The relevance of linguistic theory and methodology of the teaching of English receives special attention. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Macris.

Linguistics 285a. SEMANTICS.

This course studies meaning. It deals with and classifies the changes in the meanings of words and phrases, and it analyzes simile and metaphor. It also deals with the parametric organization of the semantic system. Some attention is paid to the relation between thought and language. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Dr. Macris.

nglish 286b. SEMINAR: INGUISTIC APPROACHES O LITERATURE [261b]. Not offered, 1973-74.

study of what modern linguistics has to offer in the nalysis and criticism of literature, with special attention to he contributions of the generative-transformational, tagnemic, and parametric approaches. Offered at the discretion f the Department. Prerequisite: consent of the instructor.
Dr. Macris.

inguistics 287a. INTRODUCTION O LINGUISTICS. Not offered, 1973-74.

his course is devoted to the theory and methodology of escriptive linguistics. It deals with the nature and function f language, the relation between speech and writing, honology, morphology, syntax, lexicology, the socioultural setting of language, the contact of linguistic ystems, and the problems of "correctness." Emphasis is laced upon the dynamics of systems analysis. Offered at he discretion of the Department. Prerequisite: consent of he instructor.
Dr. Macris.

inguistics 288b. COMPARATIVE AND HISTORICAL LINGUISTICS.

This course examines the theory and methodology of omparative and historical linguistics. It focuses on inguistic geography, linguistic borrowing, the causes of inguistic change, the comparative method and reconstrucion, and problems in analyzing languages with and without a iterary tradition. Emphasis is placed upon the dynamics of systems analysis. Offered at the discretion of the Department. Prerequisite: consent of the instructor.
Dr. Macris.

COMPARATIVE LITERATURE

Comp. Lit. 18. LITERATURE AND THE NATURE OF MAN.

Refer to description under Department of Foreign Languages.
Mr. King and Dr. Anderson.

THEATRE ART

Theatre Art 286. SEMINAR: IBSEN. [formerly Eng. 227].

Refer to description under Department of Theatre Art.
Dr. Schroeder.

FOREIGN LANGUAGES AND LITERATURES

DEPARTMENT FACULTY

Walter Schatzberg, Ph.D., Associate Professor of German, Department Chairman*
Karl J.R. Arndt, Ph.D., Professor of German
Raymond E. Barbera, Ph.D., Professor of Romance Languages
J. Richard Reid, Ph.D., Professor of Romance Languages
J. Fannin King, M.A., Associate Professor of Romance Languages
Marvin A. D'Lugo, Ph.D., Assistant Professor of Spanish
Emanuel S. Goldsmith, Ph.D., Visiting Assistant Professor of Jewish Literature
Judith P. Hallett, Ph.D., Visiting Assistant Professor of Classics
Pierre L. Horn, M.A., Assistant Professor of French
Kenneth Hughes, Ph.D., Assistant Professor of German
Hartmut Kaiser, Ph.D., Assistant Professor of German
Irene Kriskijans, M.A., Visiting Assistant Professor of Russian
Michael K. Spingler, Ph.D., Assistant Professor of French
Lori R. Toepel, Ph.D., Visiting Assistant Professor of Classics
Joseph Klein, D.D., Lecturer in Biblical Literature
Gale H. Nigrosh, M.A.T., Lecturer in French
Miriam Raviv, B.A., Lecturer in Hebrew
Catherine Q. Spingler, M.A., Lecturer in French

Professor Emeritus in Residence
Claude W. Barlow, Ph.D., Professor of Classics, Emeritus

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*On leave of absence, second semester, 1973-74

UNDERGRADUATE PROGRAM

Students desiring to major in the field of Foreign Languages may choose among a variety of programs to meet their particular interests as to language, literature and culture. These may be designated as: in French, in German, in Spanish, in Romance Languages, or in Foreign Languages according to the program chosen. With a departmental advisor the student works out an appropriate structure for his major, in accordance with the following guidelines:

1. A minimum of eight full advanced courses beyond French 131, German 12, Spanish 131 if the major is French, German or Spanish respectively. The major in Romance Languages and Foreign Languages involves a combination of courses in more than one language.

2. At least four full advanced courses are to be chosen from courses in related fields such as English literature, Comparative literature, Foreign literature in translation, Linguistics, History, Philosophy, Fine Arts and Music.

3. At least nine full advanced courses must be chosen from outside Group C (language and literature).

Comparative Literature. The department also offers a major in Comparative literature and other interdisciplinary studies involving literature, history, philosophy and psychology. These programs are designed by the student together with a committee of two to three faculty members. Recommended courses are all those designated as Comparative Literature, Foreign Literature and Foreign Literature in translation, as well as the following: English 129, 202b, 207b, 214a, 227b, 245b; History 218a, 218b; Philosophy 14a, 14b, 19b, 121a, 122b, 123b, 124a, 140a; Psychology 221b, 228b, 231b.

Study Abroad: The department encourages all students to study abroad either for a summer, one semester or an entire year. Through the university's affiliation with the Institute of European Studies, campuses in Vienna, Freiburg, Paris, Nantes, Madrid and Durham are readily accessible to Clark students. For futher information and to explore possibilities contact Mr. Schatzberg.

Language Dormitory: French and Spanish corridors with native speakers in residence are available in Dana Residence Center. Interested students should notify the departmental secretary.

FOREIGN LANGUAGE AND LITERATURE COURSES TAUGHT IN THE LANGUAGE

FRENCH

French 11. ELEMENTARY.

For beginners with no background in the language. Grounding in all four language skills (hearing, speaking, reading, writing) as preparations for subsequent courses conducted in the language. Four class meetings a week plus three half-hour periods of individual work in the language laboratory. Indivisible course.

Ms. Spingler.

French 11. ELEMENTARY (ADVANCED SECTION).

A fresh start for students with some previous exposure to the language but who are not yet prepared to enter the intermediate course. Designed to impart an active knowledge of French, through grammar study and oral practice, in class and in the language laboratory, with integrated short readings in French prose, poetry, and theatre. Indivisible course.

Ms. Nigrosh.

French 12. INTERMEDIATE.

Review of French grammar. Reading and discussion of provocative works in journalistic and literary prose, as well as poetry and theater, to acquaint students with outstanding personalities and ideas in French literature. Conducted in French. Individual work in the language laboratory. Prerequisite: French 11 or equivalent background in the language.

Ms. Spingler, Ms. Nigrosh.

French 131. READINGS IN FRENCH LITERATURE.

Third-year level. The emphasis in the first semester is mainly on the study of 20th century literature analyzed with respect to theme, tone, symbol, character, and plot. The second semester deals with literary and social aspects of outstanding modern authors. Conducted in French. Prerequisite: the first semester of French 12 or equivalent skill in the language, to be determined by placement.

Mr. Horn, Mr. King, Dr. Spingler.

French 132a. THE LITERATURE OF EXISTENTIALISM.

Third-year level. An examination of the representative works of Sartre and Camus, with special emphasis on their novels and theater. In addition we will also look at their socio-political writings (on the death penalty and on anti-semitism). Conducted in French. Prerequisite: French 131 or equivalent skill in the language. Admission subject to the consent of the instructor.

Mr. Horn.

French 133b. THE GROUPE DE MÉDAN: NATURALIST PROSE AND DRAMA.

Third-year level. An in-depth study of the Naturalist school, as exemplified by the novels of Zola, Maupassant, the Goncourt brothers, the plays of Becque and the *théâtre libre* of Antoine. Conducted in French. Prerequisite: the first semester of French 131 or equivalent skill in the language. Admission subject to the consent of the instructor.

Mr. Horn.

French 134b. THE GREEK MYTH IN MODERN FRENCH THEATER. Not offered, 1973-74.

Third-year level. Readings and discussions on the adaptation of the Greek myth to reflect the changing views of man and his universe, as portrayed in selected plays by Gide, Anouilh, Sartre, and others. Conducted in French. Prerequisite: First semester of French 131 or equivalent skill in the language. Admission subject to the consent of the instructor.

Mr. Horn.

French 137. ORAL AND WRITTEN FRENCH.

The aim of this third-year course is to perfect skills in communication both oral and written. In the first semester, particular attention is given to the sounds of French and to ts rhythm and melodic patterns. In the second semester, ncreasing attention is given to grammatical patterns and written French and fluency in the spoken language. Conducted in French. Meets twice a week for two hours plus hree half-hour periods in the Language Laboratory. Pre-equisite: Grade of B- or higher in French 12, or equivalent skill in the language, to be determined by a placement test. Admission subject to consent of instructor.

Mr. King.

French 165b. FRENCH PLAY PRODUCTION.

A course designed to provide direct experience of the theatri-al synthesis within which the play and the actor operate. The course will concentrate on one playwright, studying him in terms of all the problems peculiar to the staging of his plays, sets, props, costumes, acting styles, gesture and blocking. The practical aspects will be synthesized with academic research into the dramaturgy, themes, social context and style of the author's period. Possible playwrights to be studied: Molière, Marivaux, Ionesco, Genet. For the spring of 1974, the playwright will be Molière. Prerequisite: speaking knowledge of French and consent of the instructor. Given in French.

Dr. Spingler.

French 180b. INTERPRETING. Not offered, 1973-74.

An intensive and thorough grounding in the techniques and methods of simultaneous and consecutive interpreting in both French to English and English to French. Prerequisite: good knowledge of French to be determined by oral placement test and permission of instructor.

Mr. Horn.

French 181b. TRANSLATING.

An intensive and thorough grounding in the techniques and methods of translation in both French to English and English to French. Class time will be divided in two parts: a) for the translation of scientific, social scientific, and literary essays; and b) for the translation of an anthology of French short stories with a view to publishing them: the topic for Spring 1974 is "Histoires fantastiques, surnaturelles et horribles." Prerequisite: good knowledge of French to be determined by a placement test or permission of instructor.

Mr. Horn.

French 241a. GENERAL VIEW OF FRENCH LITERATURE. Not offered, 1973-74.

From the beginning of the Age of Enlightenment to the Early Twentieth Century. An interpretation of the main currents of French literature between the age of Louis XIV and the First World War. Each period is studied concentrating on a limited number of authors or schools so as to best represent the characteristics of the period, social and philosophic as well as literary. Conducted in French. Prerequisite: Grade of B- or higher in a third year course.

Mr. King.

French 241b. GENERAL VIEW OF FRENCH LITERATURE. Not offered, 1973-74.

From the Middle Ages through the Age of Louis XIV. An interpretation of the main currents of French literature from the Chanson de Roland through the period of the great classicists of the seventeenth century. Each period is studied concentrating on a limited number of authors or schools so as to best represent the characteristics of the period, social and philosphic as well as literary. Conducted in French.

Mr. King.

French 251a. THE ROMANTIC SPIRIT. Not offered, 1973-74.

A tracing of Romantic elements in French literature from the late middle ages to the mid-nineteenth century with principal emphasis on the period between 1820 and 1850. Conducted in French.

Mr. King.

French 252a. FRENCH POETRY FROM CHENIER TO VERLAINE.

From the rebirth of lyric verse at the time of the French Revolution through the romantic outburst, the Parnassian perfection, to Baudelaire and his followers in the symbolist movement. Poets to be emphasized: Chénier, Hugo, Vigny, Hérédia, Baudelaire, Verlaine. Admission subject to the consent of the instructor.

Mr. King.

French 253b. THE NINETEENTH CENTURY NOVEL. Not offered, 1973-74.

Outstanding novels from Chateaubriand to the Naturalists, with particular attention to those by Stendhal, Balzac, Flaubert, and Zola. Conducted in French. Admission subject to consent of the instructor.

Mr. Horn.

French 254b. THE MODERN PERIOD. Not offered, 1973-74.

A study of some outstanding dramatists, novelists and poets to illustrate the diverse literary attitudes characteristic of 20th-century French literature. Conducted in French. Admission subject to the consent of the instructor.

Mr. Horn.

French 255a. THE MODERN FRENCH THEATRE. Not offered, 1973-74.

A study of the origins and development of *le théâtre nouveau* with emphasis on dramaturgy and *mise en scène.* The focus of the course is upon the theatre since 1950 especially Ionesco, Beckett, Genet and Arrabal, but the course also explores the affinities between these playwrights and the Dada and Surrealist movements and studies three precursors: Jarry, Ghelderode and Artaud. Given in French.

Dr. Spingler.

French 256a. FRENCH CLASSICAL TRAGEDY.

An intensive study of some of Corneille's and Racine's major tragedies. These will be analyzed closely from the point of view of dramaturgy, structure, and myth.

Dr. Spingler.

French 257b. FRENCH POETRY FROM CHARLES D'ORLÉANS TO THE BAROQUE (1400-1630). Not offered, 1973-74.

The main currents of French poetry from the last of the great medieval poets to the beginning of the classical period. Special attention will be given to Charles d'Orléans, François Villon, Clément Marot, Joachim du Bellay, and Pierre de Ronsard. Conducted in French. Admission subject to the consent of the instructor.

Mr. King.

French 258b. EXPERIMENTS IN SELF-CONSCIOUS NARRATIVE, NOVEL AND AUTOBIOGRAPHY.

A study of contemporary French prose from the point of view of the author's self-affirmation through narrative. The problem of a possibly blurred division between fact and fiction, history and myth, will be explored through a study of novels and autobiographies of Gide, Sartre, Genet, Beckett, Michel Leiris, and Henri Michaux.

Dr. Spingler.

French 261. SENIOR TUTORIAL.

A program of extensive readings and of tutorial meetings designed to provide the student with a broad view of the whole of French literature. The readings will be planned individually for each student in order to complement his previous course work.

Staff.

French 106. SPECIAL TOPICS IN FRENCH Staff.

French 206. SPECIAL TOPICS IN FRENCH. Staff.

GERMAN

German 8. BASIC GERMAN CONVERSATION.

Not offered, 1973-74.

his course is based on the film program *Guten Tag,* a series f German language-teaching films designed to teach simple onversational German. The 26 episodes, each 15 minutes in ength, tell amusing stories of five foreigners in Germany. ach film is viewed two or three times and supplemented by rills in the classroom and the language laboratory. This ourse can be taken as an independent unit, but ideally it hould be taken in conjunction with German 11.
One-half course value. Ms. Overvold.

German 10. READING KNOWLEDGE OF GERMAN.

A course in grammar and reading that will provide the student with the ability to read scientific and scholarly literature of average difficulty. No previous knowledge of German equired. Indivisible course.

Dr. Kaiser.

German 11. INTRODUCTORY GERMAN.

This course is designed to impart an active command of the German language. It combines the study of grammar with oral practice and readings in literary and expository prose. ndivisible course.

Dr. Hughes.

German 12. INTERMEDIATE GERMAN.

Review of German grammar. Reading and discussion of significant works in prose, poetry and drama to acquaint students with outstanding writers and ideas in German literature and culture. Conducted in German. Individual work in the language laboratory. Weekly written assignments. Prerequisite: German 11 or equivalent background in the anguage.

Ms. Overvold, Dr. Kaiser.

German 130. MODERN GERMAN PROSE.

Not offered, 1973-74.

Selected works by Mann, Hesse, Kafka, Dürrenmatt, and Grass. Discussions, oral and written reports in German. Prerequisite: German 12.

Dr. Schatzberg.

German 132a. ADVANCED COMPOSITION AND CONVERSATION.

Designed to develop accuracy and fluency of oral and written expression. Review of selected problems of grammar and exercises in idiomatic use of the language. Reading and analysis of modern short stories and discussion of significant aspects of contemporary Germany. Oral reports, weekly compositions. Required of majors. Prerequisite: German 12 or the equivalent. Admission subject to consent of instructor.

Dr. Kaiser.

German 134. GERMAN LITERATURE SINCE GOETHE.

Not offered, 1973-74.

Reading and interpretation of representative works of German literature since Goethe. Prerequisite: German 12 or advanced placement.

German 136b. GERMAN LYRIC POETRY.

German lyric poetry from the Reformation to the present. Prerequisite: German 12.

Dr. Arndt.

German 138a. MODERN GERMAN DRAMA.

Reading and interpretation of works of modern German drama, including plays of Wedeking, Kaiser, Brecht, Dürrenmatt, Frisch, and Weiss. Discussions, oral and written reports in German. Prerequisite: German 12.

Dr. Schatzberg.

German 140. THE AGE OF ENLIGHTENMENT AND THE PERIOD OF STORM AND STRESS.

Not offered, 1973-74

A study of the major ideas and authors of the German Enlightenment with emphasis on the conflict between rationalism and irrationalism in the second half of the eighteenth century. Prerequisite: German 12.

Dr. Schatzberg.

German 142b. GERMAN ROMANTICISM. Not offered, 1973-74.

An analysis of German Romanticism from its beginnings in the seventeen-nineties to its decline in the eighteen-thirties. Aesthetic credos, lyric poetry, the drama, major prose works (among them the fairy tale as an art form) will be discussed in their relation to the intellectual history of the period. Authors include the Schlegel brothers, Hölderlin, Novalis, Tieck, Wackenroder, Kleist, Brentano, E.T.A. Hoffmann, Eichendorff, and Heine. Given in German. Prerequisite: German 12.

Dr. Kaiser.

German 145a. THE GERMAN NOVELLE. Not offered, 1973-74.

An historical and critical study of this uniquely German genre. Particular attention will be paid to narrative technique and to the typical features of the Novelle distinguishing it from the short story on the one hand and from the novel on the other. Selections range from Early Romanticism to Thomas Mann. Where applicable, a number of poems by the author under consideration will be discussed. Given in German. Prerequisite: German 12.

Dr. Kaiser.

German 154. HISTORY OF GERMAN LITERATURE. Not offered, 1973-74.

Survey of German literature from earliest times to the present. Given in German. Prerequisite: German 132 or consent of the instructor.

German 162a. GOETHE'S FAUST. Not offered, 1973-74.

Reading and discussion of Goethe's *Faust I and II.* Given in German. Prerequisite: German 132 or consent of the instructor.

Dr. Arndt.

German 166b. GERMAN DRAMA FROM LESSING TO EXPRESSIONISM. Not offered, 1973-74.

Reading and discussion of representative plays by the chief German dramatists from the end of the eighteenth to the early twentieth century. The course will focus on the socio-political aspects of these works, on the aims and concepts of the dramatic art and the changing traditions in playwrighting. Authors include Lessing, Goethe, Schiller, Kleist, Grillparzer, Büchner, Hebbel, Hauptmann, Schnitzler, and Kaiser. Given in German. Prerequisite: German 12.

Dr. Kaiser.

German 190a. GOETHE.

An introduction to the life and work of Goethe, excepting his *Faust.* Prerequisite: consent of the instructor. Given in German.

Dr. Arndt.

German 192b. SCHILLER AND KLEIST.

A study of major literary works of Schiller (drama, poetry) and Kleist (drama, narrative prose). The works will be considered in terms of the historical epoch in which they were written. Discussion will focus on structural, moral, socio-political and existential aspects. Given in German. Prerequisite: German 12 or the equivalent.

Dr. Kaiser.

German 196. INDEPENDENT READING AND RESEARCH IN GERMAN LITERATURE.

Independent course of study limited to qualified juniors and seniors. Reading and research will be in German or English and the program arranged individually. Prerequisite: consent of the instructor.

Variable credit. Staff.

German 198. SEMINAR. Not offered, 1973-74.

Principally for advanced students of literature, this course aims at an interdisciplinary approach. Topic varies.

Staff.

German 106. SPECIAL TOPICS IN GERMAN. Staff.

German 206. SPECIAL TOPICS IN GERMAN. Staff.

HEBREW

Yiddish 10. INTRODUCTORY YIDDISH.

This course is intended to provide the student with an opportunity to gain a basic familiarity with the Yiddish language. There will be ample exposure to grammar, reading, and speaking. These skills will be acquired by work in the textbook along with classroom expression and discussion. With the acquisition of vocabulary, students will be expected to employ it in both speaking and writing.

Rabbi Gordon.

Hebrew 11. ELEMENTARY SPOKEN HEBREW.

Emphasis on the spoken, living Hebrew language. Acquisition of vocabulary and basic grammar through reading of simple texts. Part of course, audio-visual method of "Habet U Shma." Three class meetings a week plus one hour of drill and one hour of individual work in the language laboratory. Indivisible course.

Ms. Raviv.

Hebrew 12. INTERMEDIATE MODERN HEBREW.

Reading of graded texts: Selected works from modern Hebrew literature, newspapers, etc. Enrichment and reinforcement of grammatical structures and written expression. Three class meetings a week plus one hour of drill and one hour of individual work in the language laboratory. Prerequisite: The equivalent of Hebrew 11.

Ms. Raviv.

Hebrew 130. ADVANCED HEBREW.

A language-literature course based on readings of simple texts in contemporary Hebrew prose, drama, poetry. Advanced grammar and composition, with emphasis on the spoken language. Prerequisite: Intermediate Hebrew or the equivalent.

Ms. Raviv.

RUSSIAN

Clark students may take courses in Russian language and literature at the College of the Holy Cross and Assumption College through the Consortium.

Russian 11. INTRODUCTORY RUSSIAN.

An introduction to the written and spoken language. Four class periods and three laboratory sessions per week. Indivisible course.

Ms. Kriskijans.

Russian 12. INTERMEDIATE RUSSIAN.

Advanced Russian grammar. Continued emphasis upon reading and conversation. Three class periods, one supervised drill session, and three laboratory sessions per week. Open to qualified freshmen.

Ms. Kriskijans.

Russian 106. DIRECTED READINGS.

Students interested in specific authors and/or topics in Russian literature and civilization may receive instruction and guidance in either English or Russian.

Variable credit. Ms. Kriskijans.

SPANISH

Spanish 11. ELEMENTARY.

For beginners or others not yet qualified to enter the intermediate course. Grounding in all four language skills (hearing, speaking, reading, writing) as preparation for subsequent courses conducted in the language. Four class meetings a week plus three half-hour periods of individual work in the language laboratory. Indivisible course.

Dr. Reid.

Spanish 12. INTERMEDIATE.

This course is designed to improve one's reading skill. Conducted in Spanish. Three class meetings a week plus three-half-hour periods of individual work in the laboratory. Prerequisite: Spanish 11 or equivalent skill in the language, to be determined by a placement test. Students will normally proceed into Spanish 131 at the end of the first semester of Spanish 12.

Dr. D'Lugo.

Spanish 127a. PRACTICE IN ORAL AND WRITTEN SPANISH.

An advanced intermediate course to help student develop fluency and accuracy in the spoken and written language. Classes will stress composition and pronunciation, as well as conversation practice. Intended primarily for freshmen who have completed 2-3 years of high school Spanish.

Dr. Barbera.

Spanish 131. READINGS IN MODERN SPANISH AMERICAN LITERATURE.

Third-year level. Close examination of principal writers in the development of 20th Century Spanish-American prose. Special emphasis on the bestiary motif: Quiroga, Borges, Cortazar, and Arreola and their utilization of metamorhosis between man and animal. Conducted in Spanish. Prerequisite: Spanish 12 or equivalent skill in the language.

Dr. D'Lugo.

Spanish 132b. INTRODUCTION TO SPANISH LITERATURE OF THE 20TH CENTURY

Not offered, 1973-74.

Reading and discussion of selected works from the Generation of 1898 to the contemporary period (Unamuno, Pío Boroja, García Lorca, Cela, Buero Vallejo, Sastre). Emphasis on conflictual structures within dramatic and narrative works: individual vs. the group as seen particularly in the Civil War and its effects on subsequent literary and social development in Spain.

Dr. D'Lugo.

Spanish 134b. ASPECTS OF MEXICO.

This course aims to communicate something of the rich and unique cultural heritage of Mexico as seen through its history from pre-Columbian times down to the present, and especially as portrayed by creative writers since the cataclysmic events of the Revolution of 1910. According to the inclinations of the students, attention may also be given to such factors as the indigenous cultures, archeology, folklore, politics and art, and the profound effects of Mexico's extraordinary diverse geography on the life of the people. Conducted in Spanish. Prerequisite: at least the first semester of Spanish 131, or the equivalent.

Dr. Reid.

Spanish 134.1a, 134.1b. MEXICAN THEMES.

Independent study of literature dealing with some theme of Mexican culture, chosen by the student. Written report. Limited to students currently enrolled in, or who have previously completed, Spanish 134b, or have had some comparable introduction to Mexico.

Variable credit. Dr. Reid.

Spanish 135a. HISPANIC ETHOS AND CINEMA: THE FILMS OF LUIS BUÑUEL.

Viewing, discussion and analysis of the major films of Luis Buñuel in the context of the cinematic medium as well as in the broader tradition of a particular critique of Hispanic social values. The recurrent motifs of catholicism and the church, charity, violence and sexual repression will be examined as cinematic form and substance. Readings will include film scripts, film criticism, and source novels. Conducted in Spanish. Prerequisite: Spanish 12 or equivalent skill in the language. Attendance at 10 film showings during the semester (approximately one weekly) will be required of students taking the course for credit. All films will be subtitled in English.

Dr. D'Lugo.

Spanish 136b. WOMEN'S ROLE IN SPANISH LITERATURE.

Selected works will be studied with a focus on the rôle of women in the literature of Spain throughout the centuries. Prerequisite: Spanish 12 or an equivalent skill.

Dr. Barbera.

Spanish 137b. ORAL AND WRITTEN SPANISH.

Not offered, 1973-74.

Third-year level. A rapid, intensive review of grammar; the elements of phonetics; exercises in composition and pronunciation; conversational practice. Conducted in Spanish. Two regular class periods, one two-hour session, and one to two hours in the laboratory per week. Prerequisite: Grade of B- or higher in Spanish 12 or equivalent skill in the language, to be determined by a placement test. Admission subject to consent of instructor. Offered in alternate years, spring semester.

Dr. Barbera.

Spanish 242a. EARLY SPANISH LITERATURE FROM THE POEMA DE MIO CID TO THE CELESTINA. Not offered, 1973-74.

This course will emphasize the nature of epic poetry, the first manifestation of "realism" in the literature of the Middle Ages, and will culminate in the hybrid masterpiece, the *Celestina*, a combination of novel and drama, unique in the history of European literature. Conducted in Spanish. Prerequisite: Grade of B- or higher in a third-year course. Offered in alternate years.

Dr. Barbera.

Spanish 243a. CERVANTES. Not offered, 1973-74.

This course will concentrate upon *Don Quixote.* The picaresque novel will be read for its influence upon Cervantes. The views of important essayists will be studied in conjunction with the reading of the Quixote. Conducted in Spanish. Prerequisites: Grade of B- or higher in a third-year course.

Dr. Barbera.

Spanish 244b. THE DRAMA OF THE SIGLO DE ORO. Not offered, 1973-74.

Besides studying the major figures such as Lope de Vega, Tirso de Molina, Alarcón, and Calderón de la Barca, there will be some study of the origins of the drama in Spain. Conducted in Spanish. Prerequisite: Grade of B- or higher in a third-year course.

Dr. Barbera.

Spanish 245b. THE MODERN SPANISH NOVEL.

A number of 19th-century novels will be read. The 20th century will be represented by such outstanding novelists as Galdós (who bridges the 19th and 20th centuries), Unamuno, Valle-Inclán, Baroja, and Delibes. Conducted in Spanish. Prerequisite: Grade of B- or higher in a third-year course. Offered alternate years.

Dr. Barbera.

Spanish 246b. MAIN CURRENTS OF CONTEMPORARY SPANISH AMERICAN FICTION.

Examination of the works of two major writers, Jorge Luis Borges (Argentina) and Gabriel García Márquez (Colombia) as examples of the changing nature of narrative experimentation in Spanish-American fiction over the last four decades. The course will stress the individual contributions of each author to the theme of narrative experiments while attempting to relate these aspects of fiction to established literary and social traditions in Spanish America. Argentine readings will stress Borges' theory of self-conscious fiction and his extreme experiments in the development of what has come to be called the "Borgian narrative." Readings from the works of García Márquez will stress the Macondo cycle, works related to the foundation and life in the mythical town which is the setting for García Márquez's major works. Special emphasis will be given to *Cien años de soledad,* García Márquez' masterpiece, considered by some critics to be the finest novel written in the Spanish language since the *Quijote.*

Dr. D'Lugo.

Spanish 106. SPECIAL TOPICS IN SPANISH. Staff.

Spanish 206. SPECIAL TOPICS IN SPANISH. Staff.

FOREIGN AND COMPARATIVE LITERATURE COURSES TAUGHT IN ENGLISH

CLASSICS

Classics 124a. GREEK MYTHOLOGY AND RELIGION.

A study of mythology and religion and its place in the psyche and society of the ancient Greeks. Emphasis will be placed on the psychological and cultural origins of myth, the search for immortality through orgiastic and hero cults, the influence of myth on art, literature and later cultures.

Ms. Toepel.

Classics 130a. THE ART AND ARCHEOLOGY OF GREECE AND ROME.

A study of the evolution of Greek and Roman artistic forms and the methods of interpreting archeological evidence. Included in this study will be a section on urban design in the ancient world.

Ms. Toepel.

Classics 135a. GREEK DRAMA: TRAGEDY AND COMEDY.

Not offered, 1973-74.

Analyses of selected tragedies and comedies of Aeschylus, Sophocles, Euripides and Artistophanes with an emphasis on the nature, purpose and origins of tragedy and comedy; the religious and moral problems posed; play production in the ancient theater.

Ms. Toepel.

Classics 140b. GREEK AND ROMAN EPIC AND ROMANCE.

Not offered, 1973-74.

True nature and evolution of the epic from the oral improvisation of Homer to the elaborate composition of Vergil and of the Greek and Roman prose narratives, the "proto-novels," such as the *Satyricon*, the *Golden Ass* and the *Romance of Daphnis and Chloe*.

Ms. Toepel.

Classics 145b. WOMEN IN CLASSICAL ANTIQUITY: GRECO-ROMAN ROLE-STEREOTYPING AND ITS CONTEMPORARY IMPLICATIONS.

Ancient Greek and Roman views of women — as expressed in literature, history, philosophy, legal documents and art — and their relation to women's actual social position and behavioral role; a consideration of the impact of classical ideas on later Western literature and thought.

Dr. Hallett.

Classics 150b. THE IDEA OF HISTORY IN THE ANCIENT WORLD.

A study of the literary sources for the ancient civilizations of Egypt, the Middle East, Greece and Rome covering the types of literary sources available for each period and place, the aims and methods of the major historians such as Herodotus and Livy, comparison of authors dealing with the same events, and the nature of the supplementary material.

Dr. Toepel.

Classics 155b. THE LITERARY IDEAL OF HEROISM: ITS CLASSICAL HERITAGE.

A study of the fictional hero in Greek and Roman epic, tragedy, comedy and romance; the ancient literary hero's ancestors in Near Eastern and Greek myth, counterparts in history, and descendants in later literature. Readings in Homer, Aeschylus, Sophocles, Euripides, Aristophanes, Apollonius of Rhodes, Vergil, Petronius; Shakespeare, Fielding, Balzac, Goethe, Melville, Tolstoy, Ibsen, Rand, Nabokov, Roth, Updike, Kesey, Vonnegut.

Dr. Hallett.

COMPARATIVE LITERATURE

Comp. Lit. 116a. COLLOQUIUM ON MODERN GERMAN LITERATURE.

The purpose of this course is to examine some of the dominant themes in modern German literature and to acquire skill in interpreting literary works. Enrollment is limited to assure every student the opportunity for active participation. Subject for fall, 1973: Selected prose works of Rilke, Mann, Hesse, Kafka, Grass. Given in English.

Dr. Schatzberg.

Comp. Lit. 118. LITERATURE AND THE NATURE OF MAN.

Ideas held by outstanding literary artists of the Western World concerning the nature of man and his relation to the universe. The works are also to be studied as representative of the cultures of which they are products. The subject matter discussed includes Sophocles' *Oedipus the King, The Book of Job*, Dante's *Divine Comedy*, Shakespeare's *King Lear*, Milton's *Paradise Lost*, Moliere's *Misanthrope*, Goethe's *Faust*, and selected poems of T.S. Eliot. All non-English works are read in translation. Admission subject to the consent of the instructor.

Mr. King, Dr. Anderson.

Comp. Lit. 150b. GREEK MYTHS AND THEMES IN WESTERN LITERATURE.

Graeco-Roman myths and themes have provided a basis for many works of western literature. This course will cover various authors in several time periods who have used the myths of Pandora, Ullyses; the themes of return to nature, the rebellious god, the poet as guide, the vision of hell, and others.

Dr. Toepel.

Comp. Lit. 165b. FROM EXPRESSIONISM TO CATASTROPHE.

Not offered, 1973-74.

This course will study German and related world literature from the dawn of Expressionism before World War I to its catastrophic decline with the flowering of National Socialism, its antithesis, and the Götterdämmerung of World War II. Anglo-German and Franco-German literary cross-currents will naturally become a part of the study.

Dr. Arndt.

Comp. Lit. 168b. MUSIC IN GERMAN LITERATURE AND THOUGHT.

Not offered, 1973-74.

Countless musicians, philosophers, and writers have speculated on the nature of music, its mysterious power to nfluence people and to communicate strong feelings. This course will be devoted to reading and discussion of works by the following authors from the German speaking countries of the nineteenth and twentieth centuries: Wackenroder, Kleist, Schopenhauer, E.T.A. Hoffman, Goethe, Grillparzer, Heine, Mörike, Wagner, Nietzsche, Hesse, and Thomas Mann. The approach will be predominantly thematic; however, several works will be studied which reveal the author's successful attempts to employ musical devices and structures in his iterary creations.

One-half course value. Dr. Kaiser.

Comp. Lit. 170b. SEMINAR IN EXISTENTIALISM AND MODERN EUROPEAN FICTION.

Not offered, 1973-74.

Kierkegaard's *The Sickness unto Death* provides the unifying heme for an intensive study of a number of major works of 19th and 20th century Russian, German and French writers. These include Gogol, Dostoevsky, Nietzsche, Kafka, Rilke, Sartre, and Camus.

Comp. Lit. 175b. EUROPEAN ROMANTICISM.

Not offered, 1973-74.

A study of the origins and development of the Romantic magination in France and Germany. Questions about the unity of Romanticism and about the relation of romantic to modern literature will be raised.

Mr. Horn, Dr. Kaiser and Dr. Schatzberg.

Comp. Lit. 180b. IRRATIONAL CURRENTS IN CONTEMPORARY THEATRE.

Not offered, 1973-74.

A study of the preoccupation in modern theatre with "primitive" forms of dramatic expression such as ritual, myth, magic, non-verbal communication, theatre as a form of modern psychotherapy.

Dr. Spingler.

Comp. Lit. 190a. CRITICAL APPROACHES TO LITERATURE.

This course introduces students to a wide variety of critical approaches which have been taken toward literature. Although some Neo-Classical and Romantic criticism is discussed, the emphasis is on those postures characteristic of the twentieth century and which the student is most likely to encounter and to find fruitful for the development of his own critical responses: the psychological approaches of Freud and Jung, the historical and Marxist methodologies, existentialist interpretations, the "intrinsic" approach of the New Criticism, the perspectives of literary sociology, and others.

Dr. Hughes.

Comp. Lit. 195b. THE BIBLE AS LITERATURE.

This course deals with the Bible as a literary masterpiece, *not* as a theological work. The course purpose is two-fold: to introduce students to the variety of forms, legends, myths, and heroes in the Bible; and to acquaint them with Biblical analogues and references in European literature. Readings will be taken from the Old and New Testaments, the Apocrypha, and the Dead Sea Scrolls.

Mr. Horn.

Comp. Lit. 197b. THE FAUST THEME IN LITERATURE AND MUSIC.

Not offered, 1973-74.

A study of man's search for forbidden knowledge and power is represented in literature and music by the character of Faust from the Reformation to the present. The following major treatments of the theme are included in the course. *The History of the Damnable Life and Deserved Death of Doctor John Faustus* (1592), Marlowe's *Dr. Faustus,* Klinger's *Faustus, His Life, Death, and Doom,* Goethe's *Faust,* Thomas Mann's *Dr. Faustus,* Paul Valéry's *Mon Faust,* Lawrence Durrell's *An Irish Faust,* Berlioz's *Damnation of Faust,* Boito's *Mefistofele,* Gounod's *Faust,* and Liszt's *Faust Symphony.* Given in English.

Dr. Arndt.

Comp. Lit. 199. THE GERMAN CONTRIBUTION TO WORLD LITERATURE.

Goethe in 1827: "The epoch of world literature is here and everyone must now work to hasten the development of this epoch." Reading, analysis and discussion of translated works from various periods of German literature, starting with the *Song of the Nibelungs* and ending with representative works of the currently dominant "Group 1947." Given in English. Prerequisite: consent of the instructor.

Dr. Arndt.

Comp. Lit. 205b. EXPERIMENTS IN MODERN NARRATIVE FORM.

This course investigates the modifications of the traditional novel form which have maintained the novel's position as the major literary genre of the twentieth century. Representative works of the following authors will be studed: Joyce, Virginia Woolf, John Fowles, Proust, Beckett, Michel Butor, Thomas Mann, Hermann Broch.

Dr. Hughes.

Comp. Lit. 210. THE LITERARY HERO.

As early as 1499, in European literature, a harlot becomes the heroine of a major work. The intrusion of characters of less than heroic stature is an innovation that merits some study. Beginning with the *Celestina,* and followed by a number of works including *Lazarillo de Tormes* and *Moll Flanders,* an attempt will be made to trace the increasing importance of characters of "piccola nazione" in the literary work. Heroic qualities yield to their opposite. The questions and problems that arise as a result of such a displacement will be the subject of analysis and commentary.

Dr. Barbera.

Comp. Lit. 230a. ELEMENTS OF DRAMA.

An exploration of ways of approaching the dramatic text based on the conditions and problems peculiar to the stage. Through the study of representative plays from major dramatic periods, the course will investigate the nature of such concepts of dramatic analyses as Plot, Character, Dialogue, and Enactment as well as such elements of dramatic aesthetics as Tempo, Mode, Image and Sequence of Impressions. The particular nature of the points of view of playwright, director, actor and spectator will be investigated.

Dr. Spingler.

Comp. Lit. 240b. ELEMENTS OF NARRATIVE.

An introduction to the traditions and techniques associated with the development of western narrative literature. The course will explore two central areas of critical concern: the conventions of the narrative art (genre distinction, problems of verisimilitude, peripatetic and picaresque forms); techniques and the analysis of narrative models (rhetorical and linguistic devices, formal and structural approaches to the narrative text, non-literary disciplines — psychology, history, anthropology — and the understanding of narrative models).

Dr. D'Lugo.

Comp. Lit. 251a. FUNDAMENTALS OF LITERATURE.

This core course is required of candidates in the B.A./M.A. Comparative Literature Program and is open to majors in Comparative Literature with permission of the instructor. The course will attempt to answer some fundamental questions concerning the nature, meaning and significance of literature. Literature as a body of material defies exact definitions or rules. The course will necessarily be tentative and exploratory and problems arising from disputed views through the centuries will be considered. A limited number of works will be studied as problematical texts.

Two course value. Dr. Barbera.

Comp. Lit. 256. COLLOQUIUM ON PROBLEMS.

An ongoing colloquium designed to consider the formulation and resolution of problems in comparative literature. (Prerequisite: Open to and required of students accepted into the Comparative Literature Program).

Staff.

FRENCH

French 130a. MODERN FRENCH NOVEL.

Readings and discussions of outstanding works of contemporary French fiction, including novels by Gide, Malraux, Sartre, and Camus.

Mr. Horn.

French 130b. THE THEATER OF REVOLT. Not offered, 1973-74.

A study of plays representative of surrealist, symbolist, existentialist and absurdist theater, and discussion of Artaud's theory of the Theater of Cruelty. Among the playwrights to be read: Jarry, Cocteau, Vitrac, Camus, Beckett, Vian, Sartre, Ionesco, Césaire, and Genet.

Dr. Spingler.

French 150b. ROUSSEAU AND HIS DISCIPLES. Not offered, 1973-74.

An extensive study of Rousseau and his disciples: the "naive" Bernardin de Saint-Pierre and Chateaubriand and the "cynical" Choderlos de Laclos and Marquis de Sade. Conducted in English.

Mr. Horn.

HEBREW

Hebrew 119a. HEBREW SCRIPTURES-PENTATEUCHAL AND HISTORICAL BOOKS. Not offered, 1973-74.

A survey and critical analysis of Genesis, Exodus, Leviticus, Numbers, Deuteronomy, Joshua, Judges, Samuel, and Kings.

Rabbi Klein.

Hebrew 120a. HEBREW SCRIPTURES-PROPHETIC AND WISDOM LITERATURE.

An analysis of relevant texts in Amos, Hosea, Micah, Isaiah, Jeremiah, Ezekiel, Proverbs, Job, Ecclesiastes in terms of their historical, social and religious background and their role in shaping the thinking of the Biblical Age.

Rabbi Klein.

Hebrew 125a. BIBILICAL TORAH COMMENTARY, THE FOUR LEVEL APPROACH.

Among the patterns of interpretation employed by the Jewish Biblical commentators was a four-level method, known under a Hebrew term, Pardes, a word coined from their initial letters. These terms are, Peshat (literal interpretation), Remez (allegorical) Derush (expository) and Sod (mystical). This course will expose the student to various Biblical verses and ideas which have been expounded in various works on these levels of interpretation. Rabbinical writing and commentaries whose distinctive approach is characterized by one or more of these methods will be examined.

One-half course value. Rabbi Fogelman.

Hebrew 135b. TALMUDIC THOUGHTS AND LOGIC: AN INTRODUCTORY ANALYSIS.

This course will examine the methodology, language, and ideas of this unique Rabbinical work. Commenting upon and explaining every experience and area of life, the Talmud, throughout the ages, has remained an indispensible guide to Jewish Law and culture. To convey the genuine approach and framework in which the Talmud was developed, the thirteen principles of Logic by Rabbi Ishmael will be studied and applied. The methods of Scriptural interpretation played a prominent role in Talmudical discussion and Jewish Law.

One-half course value. Rabbi Fishman.

Hebrew 150b. AMERICAN JEWISH LITERATURE OF SURVIVAL: 1850 TO THE PRESENT.

The problems of Jewish religious and cultural continuity in America as reflected in essays, memoirs, poetry and fiction. Topics to be discussed include the immigrant experience, assimilation and identity, anti-Semitism, the influence of American democracy on Judaism, religious and secularist ideologies, Zionism, the impact of the European holocaust, and the relationship of American Jews to Israel.

Mr. Goldsmith.

Hebrew 165a. MODERN HEBREW LITERATURE. Not offered, 1973-74.

A survey of the renascence of Hebrew language and literature from the 1880's to the establishment of the State of Israel in 1948. Major currents and modes will be noted with readings of Hebrew writers in the area of fiction, essay, poetry and drama. Among the writers to be read and discussed: Mendele, Ahad Ha-am, Beridichevsky, Frishman, Peretz, Bialik, Tchernihovsky, Schneour, Kahan, Greenberg, Brenner, Berkowitz, Gnessih, Shoham.

Hebrew 175b. THE LITERATURE OF MODERN ISRAEL. Not offered, 1973-74.

The major problems facing the "old and new" generation of Israeli novelists, short story writers, poets and dramatists will be explored. Among the writers included will be Agnon, Hazaz, Burla, Shenberg, Yizhar, Schlonsky, Altermann, Goldberg, Karni, Shamir, Meged, Amihai, Yehoshua, Oz.

Hebrew 185a. TRENDS AND VALUES IN YIDDISH LITERATURE.

An outline of the major lines of development from the folk literature of the sixteenth century to the contemporary short story, novel, essay and poem. Yiddish literature will be viewed both as an aspect of world literature and as a major factor in the preservation and enhancement of the specific distinguishing characteristics of the Jewish experience.

Mr. Goldsmith.

RUSSIAN

Russian 170b. DOSTOEVSKY.

This course will focus on various aspects of Dostoevsky's art and thought, through lectures and class discussion. Readings include shorter works, such as "Notes from the Underground," and the major novels, *Crime and Punishment, The Idiot, The Possessed* and *The Brothers Karamazov.* Given in English.

Ms. Kriskijans.

Russian 175b. MODERN RUSSIAN PROSE. Not offered, 1973-74.

A selection of outstanding Russian prose works of the 19th and 20th centuries. Readings include stories of Pushkin, Gogol, Chekhov, Babel and Olesha, as well as novels by Biely, Pasternak, and Solzhenitsyn. Given in English.

Russian 180a. THE 19TH CENTURY RUSSIAN NOVEL.

A study of the development and evolution of the novel during the Golden Age of Russian literature. The course will include representative works of Lermontov, Gogol, Aksakov, Goncharov, Turgenev, Dostoevsky, Tolstoy, and Saltykov-Shchedrin.

Ms. Kriskijans.

SPANISH

Spanish 130a. CERVANTES. Not offered, 1973-74.

This course will concentrate upon *Don Quixote* with excursions into other writings of Cervantes illustrating the changes in his literary development. Cervantes' debt to previous literary works will be studied. Extensive reading of critical material pertinent to the Quixote will be required. The course will be conducted in English. For students without a command of Spanish, readings will be available in English.

Dr. Barbera.

LINGUISTICS

Linguistics 115. MAN AND LANGUAGE.

Refer to description under Linguistics.

Dr. Reid.

260a. LINGUISTICS AND LANGUAGE LEARNING.
(Also designated Education 260a.) Not offered, 1973-74.

Refer to description under Linguistics.

Dr. Reid.

GEOGRAPHY

DEPARTMENT FACULTY

Saul B. Cohen, Ph.D., Professor of Geography, Director of the Graduate School of Geography
Leonard Berry, Ph.D., Professor of Geography
Gerald J. Karaska, Ph.D., Professor of Geography; Editor of Economic Geography
Robert W. Kates, Ph.D. Professor of Geography
Duane S. Knos, Ph.D., Professor of Geography
Henry J. Warman, Ph.D., Professor of Geography
Martyn J. Bowden, Ph.D., Associate Professor of Geography
William A. Koelsch, Ph.D., Associate Professor of History and Geography*
Lawrence A. Lewis, Ph.D., Associate Professor of Geography
Roger E. Kasperson, Ph.D., Associate Professor of Geography and Government

nne Buttimer, Sr. Mary Annette O.P., Ph.D., Associate Professor of Geography

eorge F. McCleary, Jr., Ph.D., Associate Professor of Geography*

. Richard Peet, Ph.D., Associate Professor of Geography*

ichard A. Howard, Ph.D., Assistant Professor of Geography and Biology

ouglas Johnson, Ph.D., Assistant Professor of Geography

anganathan Ramachandran, Ph.D., Visiting Professor of Geography, Semester I

tephen L. Feldman, Ph.D., Visiting Lecturer in Geography, Modules III and IV

TAFF

olly Carew, Map Curator

orman Carpenter, Manager, Cartographic Laboratory

ary A. O'Malley, Administrative Assistant

ROFESSORS EMERITI

aymond E. Murphy, Ph.D., Professor of Economic Geography, Emeritus

amuel Van Valkenberg, Ph.D., Professor of Geography, Emeritus

Each year the School of Geography has in residence or as off-campus affiliates a number of Research Affiliates. For 1973-74, these are: Asher Schick, David Sharon, Gerhard Tschannerl and Ian Burton. Also Dr. Ewa Novosielska of the Polish Academy of Arts and Sciences will be a visitor in residence in Geography.

On leave of absence, 1973-74.

When the Graduate School of Geography was organized n 1921, Clark became the second university in the United tates to establish a separate graduate program in eography. At the present time, advanced training is rovided leading to the Master's and Doctor's degrees. In ddition, the school offers an undergraduate major, and a 7- nd 5-year program, A.B.-Ph.D. and A.B.-A.M. degrees. lark is a center for geographical training and research in the nited States, and its various offerings provide a maximum f individual attention through student-teacher dialogue.

UNDERGRADUATE PROGRAM

Majors in geography are required to take the following: (1) Survey of Geography (11a) plus two introductory courses from the following: Physical Geography (14a), Economic Geography (15a), Cultural Geography (17b), Maps and Mapping (19b). Substitution of 100-level courses in these four areas may be approved by the department. (2) Skill courses (two of the following): Introduction to Statistical Geography (110a), Computer Programming (212b), Second college year level foreign language, or Cartography (any two of the four half courses 191-195). (3) A minimum of five elective semester courses in geography. (4) A minimum of four semester courses in a related field. A list of related courses is available in the Geography Office.

For those taking a dual or interdisciplinary major, Geography 11a is required and two of the four "skills" courses as well as a minimum of three other geography courses.

An Honors program in Geography offers opportunity for independent study and research. Information regarding the program can be obtained from the Geography Office.

THE GRADUATE SCHOOL OF GEOGRAPHY

Admission: Applicants without prior training in Geography are welcome, but depending on their concentrations, may be required to improve their knowledge of Elements of Geography, Economic Geography, Cartography, or Descriptive Statistics. Courses taken to remedy any deficiencies will not count as part of the regular program. The Graduate Record Examination scores (Verbal and Quantitative) are required of all students with the exception of those in foreign countries. The GRE Advanced Placement Test in Geography is desirable, but not required.

Degree Objectives: The graduate program in Geography at Clark has been derived from a synthesis of faculty-student discussions, documents and experiences. The Ph.D. training program stands as the central thrust in the Graduate School of Geography at Clark. In the context of the graduate training program, it is assumed that students may wish to pursue two tracks: One, the traditional Ph.D. with its training and experiential requirements in research and in teaching (assuming minimal steps for competence in the latter); the other, the Ph.D. with training related directly to the competence of individuals as college Geography teachers, the thrust being in a combination of work relating to the teaching and learning of Geography as a Social Science, and specialization in one major sub-field in Geography.

The School of Geography fosters student and faculty exchange with other institutions, including institutions outside the field of Geography and with Geography departments elsewhere. Clark has long encouraged ties with foreign Geography students and faculty. Focus in recent years has also included links with developing institutions in the U.S. through training of prospective faculty and facilitating programs.

Specialized Programs in Sub-Fields: The curriculum is organized to focus on specialized programs in sub-fields of Geography. Such sub-fields are developed around a series of sequentially-oriented courses which, in general, occupy from one-third to no more than one-half of the student's formal doctoral program. The sub-fields are organized in accordance with the interests, competencies and breadth of the staff. Programs in Environmental Management, Political Geography, Urban Geography, Geomorphology, Historical Geography, Cultural Geography, Geography and its Teaching, are examples of concentrations. Minor field concentration is also required, permitting, as a side benefit, shifts in the major concentration or sub-field. Therefore, even those students who arrive with pre-conceived notions about the major concentration will have opportunities to switch to other fields. In general, sub-fields are organized around committees with three to five staff members. Responsibility for supervision of the student's course, dissertation and other training experiences is with the sub-field advisor.

In organizing the curriculum in this specialized structured manner, there is neither the intention nor the desire to exclude faculty and students who do not wish to operate within the framework of a formal sub-field. Students may wish to create their own personalized programs or fields of concentration outside of the formal sub-fields. The only limit to this lies in the general nature of the offerings and in the interests and competencies of staff. Where formal, specialized programs do not exist, it becomes the responsibility of the major advisor to develop, together with the students, a program whose various prerequisites will follow the general form and intent of the Clark Graduate Geography program. Development and evaluation of specialized programs rests heavily on the activities of joint student-faculty committees. Passing of prerequisites (e.g., substantive course background, statistical methods, computer science, or cartography) is essentially the responsibility of the specialized concentration, as is the encouragement of cross-disciplinary training.

Orientation Program for Entering Graduate Students: All entering graduate students are required to take the following: (1) a *Diagnostic Week,* the first week of the Fall semester, in which students will attend sessions organized by groups of faculty and students in various subfields. Based partly upon the results of these sessions, student course directions will be developed. (2) *Approaches to Geography* (Geog. 396a) — a series of presentations by various members of the faculty which will survey research efforts in specific subfields. Seven such sessions will be held weekly beginning in the second week of the Fall semester. This Workshop will consist essentially of readings and discussion (2 credits). (3) *Geographic Ways of Knowing* (Geog. 305a) — a Workshop concerned with approaches to learning, the development of a sense of problem, and scientific inquiry. Meetings will be held weekly for seven weeks beginning the second week of the Fall semester and will be conducted by Professor Knos (2 credits). In addition to entering students, some continuing students are invited to participate and at the end of the Workshop those students who wish to continue may do so through some form of directed study on an individual or group basis.

Formal Course Requirements: Other than those courses considered prerequisite to the specialized or individually-tailored program, no formal course requirements are set. It is the full responsibility of a student's advisor to require that a student take courses in areas of deficiency. Such courses might be required on a formal basis, on an audit basis, or through organized readings.

Proficiency and Research Papers: two formal papers are required. A proficiency paper, normally submitted during the second semester of the first year, and a research paper in the field of specialization, normally submitted during the second year. Both papers are brief and in the style and form of scholarly articles.

The Proficiency Paper: all incoming students are expected to present the proficiency paper no later than between March 15th and April 15th of the academic year. The objectives of this paper are two-fold: (1) to evaluate a student's ability to think and write logically and to articulate a research problem, and (2) to identify individual strengths and weaknesses as a guide to future course work and needs. The paper should normally not exceed 30 pages (unless the M.A. thesis is presented), excluding specialized bibliographical eferences, and should represent a finished piece of work in oth style, sense of research problem and findings. The style hould follow Turabian in terms of what is expected of a cholarly article. The paper may be generated within the ontext of the Orientation Program. It is expected that this aper will be read by three individuals, the major reader rawn from the research area and two members of the faculty ho play the role of generalist-readers.

The Research Paper: As a prelude to the development of doctoral dissertation proposal, each student is expected to ubmit an advanced research paper (15-30 pages in length) in is field of specialization approved by his major advisor. This aper is to be submitted as demonstration of his ability to esearch a problem in depth and to write it in publishable orm (cf. Turabian). Generally the research paper is written in onnection with a course or seminar taken in a specialized ield and is submitted during the second year. Distinguished rom the proficiency paper which is likely to show only reliminary inquiry into a problem area, the research paper is xpected to evince mastery of the topic. The advisor is esponsible for approving the paper and submitting it to the eography Office.

The research paper is a prerequisite for the pre-doctoral A. Should a student not desire to apply for this M.A., he or he need not submit the research paper. However, it is ssumed and strongly urged that all students apply for the re-doctoral M.A. and submit a paper.

Residence Requirement: A three-year residence beyond he A.B. degree is required for the Ph.D. program. One of the ears in residence must be the year in which the dissertation roposal is submitted and approved, and, as part of the hree-year residence the student must remain in residence for ne semester (or one summer under direct supervision) ollowing approval of the outline to work on the dissertation. fter approval of the dissertation proposal, if the dissertation s not completed by the end of four years, the proposal must e submitted for re-approval. One prerequisite for such eapproval is provision for one academic semester's esidence during the next year to work on the dissertation. Twelve weeks during the summer is considered the quivalent of an academic year semester for this purpose, ith the proviso that a faculty member be in residence at lark during the summer and express a willingness to upervise.) Upon completion of all formal requirements, save he completion of the dissertation, the student is expected to ile for candidacy with the Graduate School, unless specific permission not to file is granted by the School of Geography. Students entering with an M.A. in a field other than Geography will be expected to take essentially the three year residence program. Students entering with an M.A. in Geography from another institution may expect to complete their residence in five semesters, or two and one-half years.

Teaching and Research Prerequisite: Some teaching and research experience at Clark (or its equivalent at another institution) is prerequisite to the Doctor's degree. Every effort is made to organize various forms of internships to provide on-and-off campus training activities, at the teaching and research levels, generally at the end of the second year of residence.

DOCTOR OF PHILOSOPHY

A. *Language and/or Alternate Requirement:*

Options to examination in a traditional foreign language are available. These include (1) computer science, (2) statistical methods, and (3) cartography; in addition, other options can be required or made available by individual concentrations, with the approval of the faculty. The requirement varies with the concentration.

B. *Field Camp*

Field Camp is not a general requirement, but is offered and may be designated as a requirement by specific concentrations.

C. *History and Philosophy of Geography*

The history and philosophy of Geography is required as part of the Ph.D. examination, in the form of a written qualifying essay related to the major sub-field of concentration, demonstrating a knowledge of the intellectual history of the concentration and of its relations to the remainder of the discipline.

D. *The Ph.D. Examination*

All Ph.D. candidates must prepare themselves for examination in three fields. The major field examination consists of a 90 minute oral examination. The student may opt for either a 45 minute oral or a 3 hour written examination in each of the two minor fields. Selection of fields should be made in consultation with the major advisor and the supervisory committee at least two months in advance of the examination dates, and is subject to departmental approval. In selecting the three fields, breadth in an interrelated set of sub-fields, depth in connection with the proposed dissertation topic, or competencies and availability of staff are considerations.

Under normal circumstances it is expected that the language requirement (or its alternatives) will have been successfully met prior to the student's taking the Ph.D. examination. Approval of the dissertation proposal may precede the Ph.D. examination. Doctoral examinations are not normally conducted between May 1 and September 15, and should be requested 60 days before the desired date.

E. *Committee System for Ph.D. Dissertation:*

The dissertation committee is composed of five faculty members, with responsibilities for: (a) approval of the outline; (b) reading and reviewing of the dissertation (two readers and three reviewers); and (c) participating in the dissertation defense. When the dissertation proposal has been approved by the committee in its entirety or majority, a letter to this effect shall be submitted to the Geography office by the first reader together with 15 copies of the proposal. The director of the School will then circulate the proposal to each member of the faculty for comments and final approval will be made by the director in light of these comments.

When the draft of the dissertation has been approved by the committee, three copies of the draft with a letter to the effect of the approval, signed by the first reader, will be submitted to the Geography office. The director will then inform the faculty that these copies are available for examination for a period of two weeks. Anytime after the end of the two week period, the defense may be scheduled. In addition to the committee, any member of the Clark faculty (geography or other departments) is invited to participate in the defense. A week before the defense date, notices will be given of the defense to the Dean of the Graduate School. If the defense is adequate, then the dissertation in final form is delivered, with two copies to the departmental office and the ribbon copy to the Registrar.

Master of Arts: While the thrust of the Clark Geography Program is at the doctoral level, two types of M.A. degrees will be made available:

A. *The Pre-Doctoral M.A.*

Students working toward the Ph.D. will be granted, upon request, an M.A. degree at the end of the required residence period, having completed: (a) the dissertation proposal; (b) required course work; (c) the Ph.D. preliminary examination; and (d) a formal research paper approved by the concentration advisor.

B. *The Non-Doctoral M.A.*

Normally no later than at the end of the first semester of the second year of residence, after a review process that includes a proficiency paper in the concentration at the end of the first year, students may opt or may be advised to shift to a terminal M.A. degree, under which circumstances they will be expected to drop one or two courses in order to write thesis. This thesis is envisaged as a research paper or short article (15-30 pages), demonstrating an ability to define a problem as well as serving as evidence of research competence. The thesis would be presented in a manner as to meet the form and standards of a professionally acceptable article, and will be defended as the Master's Oral Examination.

After approval by the committtee, three copies of the final draft with a letter by the major advisor noting committee approval will be delivered to the Geography office. The director will then announce to the faculty that the draft is available for examination. Anytime after the end of ten days, the defense may be scheduled. In addition to the committee, any member of the Clark faculty (geography or other departments) is invited to participate in the defense. A week before the defense date, notice will be given of the defense to the Dean of the Graduate School. The thesis committee consists of the major advisor and two reviewers. After approval by the committee, three copies of the final draft are circulated to the faculty as a whole. Following defense of the theseis, two final copies are delivered to the departmental office and the ribbon copy to the registrar. Thesis defense should be conducted by May 1st to meet June commencement.

C. Since 1971-72, formal 7- and 5-year programs for Clark undergraduate students have been offered, leading to the Ph.D. and A.M. degrees in geography. At the undergraduate level, applicants must major in Geography and a dual or interdisciplinary field, and make application at the end of the first semester of the junior year. The A.B.-Ph.D. program may include one (the sixth) year off-campus, in residence at another university or agency. Admissions are limited to a very small number of highly qualified students and in subfields of concentration that are approximate to Clark's range of offerings. For specific information, contact the Director of the School of Geography. Applications to these programs should be submitted to the Geography Office no later than May 15th.

DISTINCTIVE FEATURES AND SPECIALIZATION

The School of Geography is housed in completely new quarters, opened for the fall of 1970. Graduate students and Senior Geography majors are assigned carrels in the Geography Workroom. The Workroom and other sections of the Geography Building contain specialized equipment and research facilities for the use of students and staff. The Libbey Library of the Geography Workroom serves as a student lounge, and the John K. Wright Mezzanine serves as the Reading Room.

Cross-disciplinary training, as evidenced by the four joint appointments held by geography faculty with other departments; the clustering of faculty research and teaching interests in several areas having to do with the man-environment system; and specialization in urban-economic, environmental management and behavior, international development, political, historical, cultural geography and geomorphology currently characterize the school.

PUBLICATIONS

A professional magazine, *Economic Geography,* is edited by a faculty member. Started at Clark University in 1925, it is the only journal published in English that specializes in economic and urban geography. The magazine has a world-wide distribution with a total circulation of about 5,000.

The graduate students, through the years, have maintained the Clark University Geographical Society. The annual publication, *The Monadnock* keeps School of Geography alumni in touch with each other and with news and scholarly activities in the School.

COURSES

Courses are grouped according to various subfields and within subfields according to level. All courses listed will be offered during 1973-74. Other courses are offered in alternate or subsequent years.

INTRODUCTORY GEOGRAPHY

11a. SURVEY OF GEOGRAPHY.

A general framework for understanding geography with emphasis on the interrelation of process through various approaches to geographic research. Urban, physical, economic, political, cultural and regional segments will be synthesized by various faculty. For freshmen and sophomores; juniors and seniors admitted with consent of instructor.

Dr. Johnson, Coordinator & Staff.

101b. GEOGRAPHY: FACTORS & CONCEPTS FOR NON-GEOGRAPHY MAJORS.

The interdisciplinary nature of this course will be in evidence throughout. For example, students with an interest in these fields should find the content, supplementary materials, methods and techniques dealt with in the course helpful, and hopefully, interesting: in the Physical Science courses of Biology, Geology and Physics; in the Social Science courses of Economics and Sociology; and in Government, History, International Relations. The course will be particularly valuable to those who plan to teach. Students, however, who desire to take the course for its own sake, geography per se, and who have no interdisciplinary relationships in mind are most welcome.

One-half course value. Dr. Warman.

A number of other courses at the 100 level are open to freshmen who have taken Geography 11a.

CULTURAL GEOGRAPHY

17b. CULTURAL GEOGRAPHY.

An ecological and historical approach to the study of cultures and culture change in a spatial context. Emphasis is placed on case studies and problems. A schedule of three lectures and one discussion per week are integral course components.

Dr. Johnson.

220b. SEMINAR ON LANDSCAPE.

An examination of the changing southern New England landscape as an example of general concepts. The landscape art of the early to mid-19th century, in conjunction with documentary and ecological data, forms the course focus. Projects and field trips included. Permission of instructors required.

Dr. Johnson & Dr. Kelsey.

282b. HUMAN RESOURCES OF THE UNITED STATES.

The indicators of quantity and quality, the distribution and density, and the trends of population in the United States will be gathered, tabulated, mapped and discussed. The factors which enhance or debilitate human resources will be assessed as well as the kinds and degree of investments made in human resources. The study will conclude with appraisals of what the future of our human resources might be in the realm of freedom and in United States' influence overseas.

One-half course value. Dr. Warman.

372a. SEMINAR: GEOGRAPHY OF POPULATION.

Seminar arranged on major topics of population distribution; density; trends in increase or decrease and mobility; relationships to other geographic factors. Open to junior and senior majors with permission of the instructor.

Dr. Warman.

ECONOMIC GEOGRAPHY

15b. INTRODUCTION TO ECONOMIC GEOGRAPHY.

An introduction to economic geography focusing on location theory and economic development.

Dr. Karaska.

125a. DEVELOPMENT PROBLEMS.

The several dimensions of development and the reasons why the gap between developed and underdeveloped countries is widening will be explored. Among the disciplines drawn upon will be: Geography, Government, Economics and Education. Problems analyzed will include — urban growth, land reform, unemployment and government planning. Tanzania, China, Brazil and other countries will be used as cases. Listed jointly with Government.

Dr. Berry, Coordinator, Dr. Enloe & Others.

261a. URBAN ECONOMIC GEOGRAPHY.

A systematic study of external and internal spatial relationships of cities and city systems. Urbanization viewed as a process in spatial organization involving mutual interrelations among decision units.

Dr. Karaska.

365a. REGIONAL SCIENCE.

The emphasis is on advanced location theory, methodology, and models in the analysis of regional development.

Dr. Karaska & Ewa Novosielska.

ENVIRONMENT

150b. AQUARIUS: PLANNING FOR URBAN WATER RESOURCES.

Help wanted: Water resource planners for City of Aquarius to prepare 50-year plan for water supply, water quality, flood control, and recreation. Includes opportunity to use advanced computer simulation. Group collaboration required.

Dr. Kates & Staf

187a. PROBLEMS IN UNDERDEVELOPMENT.

Themes to be selected from the Indian experience (e.g. family planning, the "green" revolution, urban migration, jobless professionals, etc.) moving to a global setting.

Dr. Ramachandran.

241a. FOREST RESOURCE MANAGEMENT.

The elements of natural resource planning will be discussed. Students will be asked to develop a 50-year plan for timber and recreation for a small forest.

Dr. Howard.

256b. SCIENTIFIC INFORMATION AND SOCIETAL RESPONSE TO ENVIRONMENTAL HAZARD.

An exploratory research seminar on the relationship between the quality and presentation of scientific information and the societal response to environmental hazard of human origin. Part of an international collaborative research effort, the eminar is limited to 12 graduate students and advanced ndergraduates with research interests in this topic. Partici- ation includes attending a faculty seminar during the anuary reading period, independent research and tutorials uring module 3, and group presentation of research during odule 4. Permission of instructors is required. (The seminar cross-listed as Technology and Man 265b.)

Dr. Kates and Dr. McClintock.

57b. SPATIAL ASPECTS OF ESOURCES UTILIZATION.

eals with classical theory, theory of externalities, common robability resources, recreation resources and river basin anagement.

Dr. Feldman.

49b. SEMINAR: YSTEMS ANALYSIS IN RESOURCE PLANNING.

he design, execution and evaluation of large scale computer imulation models will be presented. Models of water esource use systems will be emphasized.

Mr. Schwarz & Dr. Howard.

50a. RESOURCE MANAGEMENT: HEORIES, METHODS AND MODELS.

heory to explain how men use resources, methods to assess esources availability and project their use, and models to itegrate theory and method to make decisions.

Dr. Kates, Coordinator & Staff.

53a. PHYSICAL ASPECTS OF RESOURCE USE.

seminar course designed to explore some aspects of the hysical environment in relation to natural resource use. The etails will be worked out with each particular group of tudents in relation to their needs and background.

Dr. Berry.

56b. COMPARATIVE SEMINAR ON VATER RESOURCES IN ARID REGIONS.

omparative seminar dealing with problems and practices in srael and the American Southwest.

Dr. Feldman.

357b. REGIONAL WATER RESOURCE PLANNING.

Advanced regional water resource planning methodology is reviewed and then applied by students to a specific region of current interest.

Mr. Schwarz.

219a. SEMINAR IN CATASTROPHE AND RECONSTRUCTION.

A research seminar dealing with case studies of past catastrophes and the patterns of reconstruction, particularly earthquakes. Permission of instructor required.

Dr. Bowden.

HISTORICAL GEOGRAPHY

253a. HISTORICAL GEOGRAPHY OF NEW ENGLAND.

Research projects geared to the production of the future *Historical Atlas of New England.* Limited enrollment of ten students. Permission of the instructors required.

Dr. Bowden & Dr. Johnson.

255b. HISTORICAL GEOSOPHY OF THE AMERICAN WEST.

An historical approach to the study of perception of regions, space and territory, landscape and physical environment with special emphasis on the American West, 1800-1973. Emphasis will be on sources and techniques.

Dr. Bowden.

363a. DYNAMICS OF CITY GROWTH.

An historical approach to study of the changing internal structure of urban areas. A review of recent contributions to the literature of urbanism with particular reference to studies of large metropolitan areas.

Dr. Bowden.

PHYSICAL GEOGRAPHY

14b. INTRODUCTION TO PHYSICAL GEOGRAPHY.

A basic inquiry into components of geomorphology and climatology. The role of man as a critical agent in physical geography is included by looking at inadvertent climatic modification and alteration of the earth's surface by man's activities. Laboratories and field trip.

Dr. Lewis.

114a. DYNAMICS OF THE EARTH'S SURFACE.

An introduction to environmental systems; processes affecting the earth's surface, gravity, water, biotic, wind and man related. Erosional-depositional rates, their causes and their results.

Dr. Berry.

122a. METEOROLOGY AND PHYSICAL CLIMATOLOGY.

The elements of climate and weather dealt with first separately and then in their interrelationships. The atmosphere studied as a thermodynamic engine. Exchanges of heat and moisture between the earth and atmosphere. Man's inadvertent role in climate change. Prerequisite: Physical Geography or its equivalent, and signature of the instructor. (See also Geog. 222b — Applied Climatology).

Dr. Warman.

211a. THE TROPICAL ENVIRONMENT & ITS UTILIZATION.

The physical geography of the tropics (climates, landform systems) will be analyzed with reference to climatological and geomorphological phenomena that exist in this area, and the ramifications of man's utilization or future utilization of these areas will be explored. Prerequisite: Geog. 14b or with permission of the instructor.

Dr. Lewis.

216a. ARID LAND FORMS.

An analysis of the landscapes of arid areas of the earth and the dynamics under which they operate with special relation to the arid southwest section of the United States and the Sahara.

Dr. Berry.

217b. SEMINAR IN PHYSICAL GEOGRAPHY.

Discussion of themes in physical geography oriented to the needs of the group but probably with a bias towards geomorphology and biogeographical aspects.

Dr. Lewis.

218a. ALLUVIAL FANS.

A literature, field and laboratory study of the dynamics of alluvial fans. Studies will be made of the processes operating on alluvial fans in New England and these will be compared with arid zone alluvial fans from the western part of the United States and other parts of the world. Students wil develop their own study emphasis within the overall topic

Dr. Berry & Dr. Lewis

219b. GEOMORPHOLOGY OF THE HIGH LATITUDES.

The selective importance of glacial and periglacial climates on geomorphic processes and their associated land assemblages is investigated. Reasons why these areas are delicat environments when man attempts to develop them wil become evident. Field and laboratory work included. Prerequisite: Introduction to Physical Geography (1973-74); Dynamics of the Earth's Surface (after 1973-74).

Dr. Lewis.

222b. APPLIED & REGIONAL CLIMATOLOGY.

Elements of physical climatology and climate classifications applied and related to physical factors (vegetation, soil, physiography) and to human and cultural attributes of selected regions. (See Geog. 122a also). Signature of instructor required.

Dr. Warman.

POLITICAL GEOGRAPHY

130b. GEOGRAPHY OF INTERNATIONAL POLITICS.

Concentrates on the impress of politics upon landscape in unique regional settings. Problem-oriented, within the context of world regional survey. Prerequisite: Geography 11a or Government 14.

Dr. Cohen.

230a. POLITICAL GEOGRAPHY AND ITS SPATIAL CONSEQUENCES.

Theory and methodology in Political Geography. Political processes and landscape interaction, at varying levels of the political hierarchy (national, urban, international). Attention to such topics as equilibrium, systems, decision-making, political action space. Open to juniors and seniors. Prerequisite: Geography 11a or Government 14.

Dr. Cohen.

75a. CITIZEN PARTICIPATION, DVOCACY AND DISSENT.

he purpose of this course will be (1) to analyze major eories as to the causes and forms of participation in the olities, (2) to examine our understanding of participation in e context of alternative models (e.g., pluralist welfare tate, elitist power structure, technological state) of the olity and (3) to review the major means available to the owerless for utilizing participation as a means of creating ower. Throughout, the course will establish an interplay etween theoretical discussions of the nature of participation d a series of comparative analyses of case studies of participation, including specific attention to advocacy and issent. One method to be employed in the latter cases will e to examine life histories of advocacy and dissent efforts d biographies of the major actors. Some of the urban ecision-making games currently available for educational se will be considered as supplements to the course. Listed intly with Government.

Doctors Kasperson and Goodman.

30b. SEMINAR IN REASEARCH AND TEACHING ARAMETERS IN POLITICAL GEOGRAPHY.

research topic to be handled by one or more teams with esearch concentration on theory formulation and testing. esponsibility for supplementary undergraduate tutorial essions in connection with the sessions which are rganized around the background and interests of seminar articipants is included.

Dr. Cohen.

REGIONAL GEOGRAPHY

86a. EUROPE— OLITICAL AND ECONOMIC PROBLEMS.

general regional survey of Europe with emphasis on its olitical, economic problems and man-land relationships. No rerequisite.

Dr. Van Valkenburg.

88b. EAST AFRICA: ROBLEMS OF A DEVELOPING REGION.

n interdisciplinary approach designed to convey to the tudent a sense of East Africa place and people and a concern with their needs and problems as they pursue difficult and differing paths of development.

One-half course value. Dr. Kates.

283b. GEOGRAPHY OF MIDDLE AMERICA.

Problems of diversity and unification in Mexico and Central American Republics, and the Greater and Lesser Antilles. The role of mid-American lands world-wide, and the regional specializations in each will be treated.

Dr. Warman.

288b. ISRAEL'S CHANGING GEOGRAPHIC LANDSCAPE.

Assessment of impact of ideology and the economics and politics of development upon the physical and cultural landscape from the last quarter of the 19th century to the present.

Dr. Cohen.

READINGS, RESEARCH AND GENERAL

98. DIRECTED READINGS IN GEOGRAPHY.

Directed readings for undergraduates in an area of their choice. Consent of instructor required.

One-quarter to one course value. Staff.

99. SPECIAL PROJECTS IN GEOGRAPHY.

Special research projects for undergraduates in an area of their choice. Consent of instructor required.

One-quarter to one course value. Staff.

202 HONORS.

Independent study, reading and research. Open only to honors undergraduates. Consent of instructor required.

Staff.

300. READINGS IN GEOGRAPHY.

Directed readings for graduate students in an area of their choice. Consent of instructor required.

One to four course value. Staff.

301. RESEARCH IN GEOGRAPHY.

Research projects for graduate students leading, usually, to dissertation proposal. Consent of instructor required.
One to four course value. Staff.

305a. GEOGRAPHIC WAYS OF KNOWING.

A Workshop concerned with approaches to learning, the development of a sense of problem, and scientific inquiry. Meetings will be held weekly for seven weeks beginning the second week of the Fall semester as part of the *Orientation Program* for entering geography graduate students.
One-half course value. Dr. Knos.

368b. PHILOSOPHY OF GEOGRAPHY.

Dr. Buttimer.

396a. APPROACHES TO GEOGRAPHY.

Paradigms, themes and models in geographic thought offered as part of the *Orientation Program* for entering graduate students.
One-half course value. Dr. Cohen, Coordinator & Staff.

399b. FIELD RESEARCH METHODS AND FIELD CAMP.

Theory and techniques of field (observational and survey) research; experimental design. Field camp after Semester I with fee charged.

Dr. Johnson.

SOCIAL GEOGRAPHY

171a. SOCIAL GEOGRAPHY.

Emphasis is on the spatial expression of mankind's socio-cultural differences. The specific values, traditions and aspirations underlying the life styles of particular social groups are seen to influence the ways in which the physical environment is perceived, used and organized, with illustrations from a wide variety of cultural settings.

Dr. Buttimer.

270a. URBAN SOCIAL GEOGRAPHY.

This course reviews two alternative perspectives on the city: (1) an "external" perspective which explores the locational characteristics of urban populations, the dynamics of urban service networks and administrative systems, (2) an "internal" perspective which explores people's territorial behavior, interaction networks and images. Through a series of case studies and field observation, an attempt will be made to integrate these two perspectives in an examination of lived experience in the city. Prerequisites: Geography 11a and Urban Geography 261a.

Dr. Buttimer.

370b. URBAN SOCIAL SPACE.

This seminar deals primarily with conceptual and technical problems in operationalizing the notion of social space. It addresses itself primarily to the social space project currently underway, and would be of interest primarily to those graduate students who have urban or environmental behavior concentrations.

Dr. Buttimer.

371b. SEMINAR: SOCIAL GEOGRAPHY.

Dr. Buttimer

TEACHING AND LEARNING

200a. GEOGRAPHY IN EDUCATION.

Geography backgrounds, techniques and prospects contributing to the geography discipline per se and geography in the social studies. Designed for those teaching or expecting to teach in present and planned school systems. Individual projects produced on a semi-tutorial basis. Signature of instructor required.

Dr. Warman.

203b. INTERNSHIP TEACHING.

An intensive period of observation and teaching in the field of geography at the high school and junior high school level. Individual supervision will be given by the staff and by cooperating teachers.
Two course value. Dr. Knos & Staff.

204a. CURRICULUM DEVELOPMENT AND ANALYSIS IN GEOGRAPHY AND HISTORY.

A consideration of the assumptions about learning, teaching, and knowledge which are incorporated in the full range of curriculum materials presently available for teaching eography and history. Each student will prepare a curricuum plan suitable to individual educational objectives for eaching history or geography. The course is required of all tudents in the history-geography *Teaching Cluster.*

Dr. Knos & Staff.

204b. INTRODUCTION TO THE TEACHING OF GEOGRAPHY AND HISTORY.

An introduction to the construction and development of earning-teaching situations in geography. Required of all students in the history-geography *Teaching Cluster.*

Dr. Knos & Staff.

205a. METHODS OF TEACHING AND RESEARCH IN EDUCATIONAL SYSTEMS.

An analysis of group and personal experiences of four components — spatial, social, political, and psychological — which function in classrooms and which hinder or enhance learning. This course provides substantive input for he curriculum development course and is required of all students in the history-geography *Teaching Cluster.*

Dr. Knos & Staff.

206a. AUTOBIOGRAPHY WORKSHOP.

A consideration of how students have learned in their own ives as a prerequisite to helping others to learn. The course seeks to engender an appreciation of both uniqueness and generalization in the process of teaching any social science discipline.

One-half course value. Dr. Knos & Staff.

263a. FUTURE WAYS OF KNOWING AND SURVIVAL.

A lecture and discussion course offered jointly by a geographer and a historian. Instructors alternate as lecurers; they will comment on each other's presentations and deas, leading into class discussion. Students will write a variety of short papers and exercises and keep a journal of heir changing reactions to the course and the subject. Instructors and students will review the possibilities and imitations of "future study", practice trend projections, systems simulation, scenario preparation, visioning, and hopefully prepare a more positive and rational attitude toward he future. An upper division course with no prerequisites. List jointly with Department of History.

Dr. Kates & Dr. Von Laue.

CARTOGRAPHY & TECHNIQUES IN GEOGRAPHY

19b. MAPS AND MAPPING.

Personal maps and mapping systems. The design and structure of maps and their history. Map reading and interpretation. A non-technical, introductory course.

Dr. McCleary.

191a. INTRODUCTION TO CARTOGRAPHY.

An introduction to cartography and the mapping process offered for seven weeks in the Fall as part of the *Elements Series.* Emphasis on problems of scale, resource materials and compilation.

One-half course value. Dr. McCleary.

192a. MAP PROJECTIONS.

The fundamental aspects and use of major types of map projections, especially their utility offered for the last seven weeks of the Fall semester. Examination of transformations to non-geographic spaces (cartograms). Offered as part of the *Elements Series.*

One-half course value. Dr. McCleary & Staff.

193b. CARTOGRAPHIC GENERALIZATION.

The elements and controls of generalization and their application to geographic and thematic data. A basic course in the *Elements Series.*

One-half course value. Dr. McCleary & Staff.

194b. MAP DEVELOPMENT AND SYMBOLIZATION.

Data for maps, their manipulation and symbolization. Mapping of point, line and area data. A basic course in the *Elements Series.*

One-half course value. Dr. McCleary & Staff.

195b. WORKSHOP IN CARTOGRAPHIC METHODOLOGY.

Selected problems in basic cartography. Application of basic theories and principles to map problems in selected fields. Open to those who have completed at least one other course in the *Elements Series.*

One-half to one course value. Dr. McCleary & Staff.

Two courses (at least four credits) in the *Elements Series* meets the skills and tools requirement in cartography for geography majors.

291a. BASIC MAP DESIGN.

Graphic elements of map design offered the first seven weeks of the Fall semester as part of the *Advanced Series.* Planning and organization of the graphic essay. Elements of typographic design and the use of lettering on maps.
One-half course value. Dr. McCleary and Staff.

292a. CARTOGRAPHIC TECHNIQUES.

Positive and negative artwork and basic photographic methods for map preparation. Offered the last seven weeks of the Fall semester as part of the *Advanced Series.* Not open to students who have taken Geography 294.
One-half course value. Dr. McCleary and Staff.

293b. CARTOGRAPHIC PRODUCTION.

Complex artwork and proofing. Printing and nonprinting processes. Offered during the first seven weeks of Spring semester as part of the *Advanced Series.* Not open to students who have taken Geography 294.
One-half course value. Dr. McCleary and Staff.

294b. ADVANCED MAP DESIGN.

Examination of the map and of the map design process. Emphasis on the problems surrounding the communication process, the effective coding and decoding of mapped data. Offered last seven weeks of Spring semester as part of the *Advanced Series.*
One-half course value. Dr. McCleary and Staff.

295b. WORKSHOP IN MAP DESIGN AND PRODUCTION.

Selected problems involving development and analysis of effectiveness of alternative solutions to mapping problems. Open to those who have completed at least one other course in the *Advanced Series*.
One-half course value. Dr. McCleary and Staff.

297a. RESEARCH AND ANALYSIS IN CARTOGRAPHY.

Exploration of selected problems in two areas: the utility of the map for the analysis of areal distributions; and the effectiveness of maps for conveying different types of information.
One-half to one course value. Dr. McCleary and Staff.

299b. SEMINAR IN CARTOGRAPHY.

A cooperative research seminar examining in depth selected problems in cartography and the mapping process.
Dr. McCleary and Staff.

110a. INTRODUCTION TO STATISTICAL GEOGRAPHY.

Principals of inferential statistics will be introduced, These will include point estimation, internal estimation, sampling distributions, hypothesis testing and correlation techniques.
Dr. Howard.

212b. COMPUTER PROGRAMMING.

Fundamentals of FORTRAN IV are presented. Designed for students with no mathematics beyond high school. Emphasis on numeric applications.
Dr. Howard.

248b. MODEL BUILDING TECHNIQUES.

Dr. Howard.

254a. PHYSICAL PROCESSES — AN INPUT IN ENVIRONMENTAL DECISION MAKING.

Utilizing geomorphic and forestry theory, various mathematical and statistical relations will be applied to real world problems. One area of inquiry will be the effects of forest cutting on slope processes. Permission of instructors required.
Dr. Lewis & Dr. Howard.

347b. ADVANCED QUANTITATIVE METHODS IN GEOGRAPHY.

Multivariate analysis including analysis of variance, miscellaneous spatial statistics (including nearest neighbor, graph and game theories, and other analyses). Undergraduates admitted with consent of the instructor.
Dr. Karaska and Staff.

URBAN GEOGRAPHY

262b. URBAN PROBLEMS.

This course deals with the process of decision-making in placement of utilities in the urban landscape. A series of ocational and developmental problems are posed for consideration within the context of a city.

Dr. Knos.

366b. URBAN SEMINAR.

A seminar to review the regional science literature leading to problems on models and techniques of metropolitan area analysis.

Dr. Karaska.

367a. SEMINAR: DIFFUSION OF AGRICULTURAL INNOVATION.

Will expand from special interests in agriculture set within he broader context of diffusion theory.

Dr. Ramachandran.

For all other courses in Urban Geography, see separate subfield listings.

GOVERNMENT AND NTERNATIONAL RELATIONS

DEPARTMENT FACULTY

Morris H. Cohen, Ph.D., Professor of Government; Representative, Washington Semester Program
Sherman S. Hayden, Ph.D., Professor of International Relations, Emeritus in residence
Cynthia H. Enloe, Ph.D., Associate Professor of Government and International Relations; Director of the IUPP Graduate Program
Allan E. Goodman, Ph.D., Associate Professor of Government and International Relations; Department Chairman
Roger E. Kasperson, Ph.D., Associate Professor of Government and Geography
Knud Rasmussen, Ph.D., Associate Professor of Government; Head Tutor, Sophomore-Junior Tutorial Program
Sharon P. Krefetz, Ph.D., Assistant Professor of Government, Director of Interdisciplinary Studies
Ivory T. Robinson, Ph.D., Assistant Professor of Government; Director of the Honors Program
Godwin A. Odenigwe, Ph.D., Visiting Professor of Government and International Relations
Ann T. Schulz, Ph.D., Visiting Scholar
Robert K. Massey, A.B., Tutor, Sophomore-Junior Tutorial Program
Lawrence Landry, B.A., Tutor, Sophomore-Junior Tuturial Program
Arnold C. Bailey, A.B., Tutor, Sophomore-Junior Tutorial Program
Mel. L. Greenberg, LL.B., Tutor, Sophomore-Junior Tutorial Program

Marjorie A. Pearsall, Administrative Assistant

UNDERGRADUATE PROGRAM

Nature and Purpose

Concentration in the Department is designed to provide students a balanced program of work in social science emphasizing the interdisciplinary study of politics and political behavior. The Department seeks to maximize teaching and research resources by providing all students interested in social science early access to small seminars and contact with faculty research. For those who will major in the Department, this program will lead to some form of student-faculty independent research by the senior year.

At the beginning of the sophomore year, every student concentrating in Government should complete a Plan of Study (on a form provided by the Department) with a selection of courses sufficient to meet the requirements set forth in the Announcements on Concentration in Government. This plan should be discussed with, and must be signed by, a tutor or faculty member representing the Government Department. The form should be returned to the Department Office by the beginning of November.

The Plan of Study is a preliminary statement of intent by the student and may be altered or amended after consultation with the tutor or advisor, provided the selection of courses satisfies the requirements of the Department and the College.

Each time a student changes his academic program, he is required to file a new Plan of Study with the Department.

Departmental Requirements: Nine full courses for the major; three full courses for the related field.

Major

A. Political Studies Seminars: Two must be taken (normally, one in the Freshman and one in the Sophomore year). This constitutes your introduction to political science. *Note:* See offerings under Government 158, 160-171.

B. Electives: Seven additional courses in government are required — including if possible, tutorials — with the student choosing among the following fields:

Political Thought and Behavior
American Government and Politics
International Politics
Comparative Politics
Urban Studies
Self-designed (by student and faculty advisor)
Tutorials
Honors Program

Note: Tutorial in Political Science (for Sophomores and Juniors): Designed as an intensive study group, each program will be tailored to individual interests and needs. Emphasis will be placed upon the examination of established theories, development of propositions about political phenomena, and application of both to concrete cases for discussion. Approximately 25 pages of written work will be required and, at the end of the tutorial, students will receive both a grade and a copy of their tutor's written evaluation of work and participation.

Related Field

A. Three full courses in any other social science.

GRADUATE STUDIES IN INTERNATIONAL URBANIZATION AND PUBLIC POLICY

International urbanization is likely to emerge as a fundamental problem for the future of societies. The world by 1980 is likely to be a predominantly urban one. There will be shifts in the distribution of city dwellers globally; no longer will one be able to contrast the developing world as "rural" and the developed world as "urban." Urbanization and development are taking on a far more complicated relationship, a fact which alters the political implications of each. In this decade alone the proportion of the world's population living in cities will increase from 38% to more than 60%, a transformation that even institutions of the most developed countries will find difficult to manage.

Our program is designed to focus on the nascent efforts of several disciplines on anticipating and planning for the urban challenges of the future. We perceive international urbanization to be a phenomenon that demands both comparative analysis cross-nationally and special concern with the processes of public policy intended to affect urban growth. As a field of graduate study, our approach to public policy denotes an orientation in teaching and research designed to coordinate and stimulate an atmosphere of maximum innovation and individual responsibility. Such an environment also permits the program to service graduates with a variety of career interests. Recipients of the Masters degree have pursued doctoral degrees, have taken up posts in American policy-making agencies, and have followed careers in international organizations involved in development.

The graduate program is two years in duration and results in an M.A. in International Urbanization and Public Policy. The program stresses a multi-disciplinary approach. In addition, students are expected to develop social science analytical skills and an expertise in a particular geographic region, whether it be the United States, Europe or an area of the underdeveloped world. Individual research is an integral part of the program and will be designed to assist the graduates to decide their own career courses subsequent to the M.A.

All new programs imply choices in how a student's program of study will be specifically determined. The International Urbanization and Public Policy program is committed to interdisciplinary, comparative analysis but within that general framework there is great flexibility so that participants can pursue their own urban-related interests.

The program integrates course work with field research and internship opportunities. It provides possibilities for joint research, shared by faculty members of this Department and students and faculty of other departments. Each student in the program prepares a thesis in his field of special interest, under the supervision and with the assistance of the appropriate member of the Department, and defends the thesis orally before an interdisciplinary committee.

In addition to this research, each student is expected to complete at least 30 semester hours of course work with at least a 3.0 average. Most, in fact, complete in excess of 60 semester hours, especially if internships and other external projects are included. Frequent student-faculty colloquia enhance the possibilities for group work and contact. Each student is assigned a principal advisor at the beginning of the academic year; each year's program must be approved by the Chairman by 10 October. Independent research projects normally await the second year, when they are emphasized and encouraged; if such research is undertaken off campus, it is desirable that the last months of the program should be spent in on-campus thesis research and writing.

Proficiency in a foreign language is very desirable, though not strictly required. All students must, however, demonstrate basic proficiency in quantitative analysis and methodology. Finally, it is presumed that every student will complete the program within the normal period of residence.

The degree of Doctor of Philosophy is being held in abeyance at the present time; however, the Department anticipates its reintroduction in the near future. The present program will facilitate the transition to advanced work elsewhere, whether within or without a university.

Special programs in the department include the Sherman S. Hayden Seminar in International Affairs, the Washington Semester Program under the auspices of the American University in Washington, D.C., a departmental Honors Program, opportunities to serve on the editorial board of the Student Journal of Politics, and the Sister Universities Exchange Programs.

COURSES

15a. INTRODUCTION TO AMERICAN GOVERNMENT.

An introductory study of the processes and efficacy of the American governmental system. Primarily devoted to an overview of contemporary aspects of the national government, the course includes problems of federalism, salient civil liberties issues, and the roles of Congress, the President, the Supreme Court and political parties in the decision-making process.
Duration: Two modules. Dr. Cohen.

102b. NO MORE VIETNAMS?

A comprehensive review of how we got involved in Vietnam, what it meant to the Vietnamese, and what it reveals about the likelihood of similar involvements elsewhere in the future. Specific attention to the issue of what would have to change in the making of our foreign policy to assure that there would be no more Vietnams.
Duration: Two modules. Dr. Goodman.

125a. DEVELOPMENT PROBLEMS.

The several dimensions of development and the reasons why the gap between developed and underdeveloped countries is widening will be explored. Among the disciplines drawn upon will be: Geography, Government, Economics and Education. Problems analyzed will include — urban growth, land reform, unemployment and government planning. Tanzania, China, Brazil and other countries will be used as cases. Listed jointly with Geography.
Duration: Two modules. Dr. Berry, Coordinator,
Dr. Enloe and Others.

158a. MICROPOLITICAL ANALYSIS.

The individual in mass society; a socio-political study and analysis of individual attitudes, values and beliefs, and their relation to role behavior and group dynamics. Some emphasis on theories of socialization and communication as devices for political analysis. Political Studies Seminar. Offered primarily for freshman and sophomore Government majors or intended majors.
Duration: Two modules. Dr. Rasmussen.

160b. SEMINAR: THE POLITICAL SYSTEM: MACROPOLITICAL ANALYSIS.

The seminar will discuss modes of analysis of political systems drawing on the works of Almond & Powell, Dahl, Lasswell, Lipset and Easton. These will be subject to intensive study and analysis, in order to accept, modify, or reject them, based on American and developing countries' experiences. Political Studies Seminar. Offered primarily for freshman and sophomore Government majors or intended majors.
Duration: Two modules. Dr. Rasmussen.

161b. SEMINAR: EXTINCTION OR EVOLUTION.

Not offered, 1973, 74.

"If Sparta and Rome perished, what State can hope to endure forever?" Does Rousseau's question become relevant to 20th century societies? How long will the U.S. last, and what will be the causes and consequences of its demise? This seminar

will examine contemporary theories on the development of society and analyze contemporary proposals and perspectives on the future existence of society. Discussions will center on the work of such activist-thinkers as Ivan Illich, Marcuse, Raskin, and Reich. Political Studies Seminar. Offered primarily for freshman and sophomore Government majors or intended majors.
Duration: Two modules. Dr. Rasmussen.

162b. SEMINAR: COMMENTARIES ON AMERICAN GOVERNMENT. To be offered, 1974-75.

Among the books analyzed and discussed are: *The Federalist Papers,* DeTocqueville's *Democracy in America,* Bryce's *The American Commonwealth,* Wilson's *Congressional Government,* Lippman's *The Public Philosophy* and another still to be selected. Political Studies Seminar. Offered primarily for freshman and sophomore Government majors or intended majors.
Duration: To be announced. Dr. Cohen.

163a. SEMINAR: POLITICS AND SOCIETY.

A study of the utility and limits of employing social variables to explain political phenomena. The major social variables to be explored as independent variables are: social class, education, sex, religion, economic growth, and membership in voluntary associations. Among the political phenomena to be viewed as dependent variables are: political socialization, political participation, alienation, mass movements, violence, stability vs. instability, and "democracy" vs. other forms of government. Political Studies Seminar. Offered primarily for freshman and sophomore Government majors or intended majors.
Duration: Two modules. Dr. Krefetz.

164b. SEMINAR: COMPARATIVE POLITICAL BEHAVIOR.

This course analyzes politics from the perspective of the individual — how he learns and weighs political values and beliefs, how he is influenced and influences others, how he reacts to appeals of leaders, parties and mass media. Much of the theory on political behavior has been based solely on American data. This course will examine patterns of individuals' beliefs and actions in other nations. Developed as well as underdeveloped countries will be studied. Political Studies Seminar. Offered primarily for freshman and sophomore Government majors or intended majors.
Duration: One module. Dr. Enloe.

165a. SEMINAR: INTRODUCTION TO COMPARATIVE POLITICAL ANALYSIS. Not offered, 1973-74.

The seminar will survey the growth of the field of comparative politics and its methodology as focal points for analyses in political research. A series of propositions about the nature of political order and political change will be discussed in order to examine the causes and results of revolution, economic development and the creation of political institutions and political power in developing societies. Emphasis will also be placed upon the use of case studies (chosen by students) in comparative analyses and upon the development of standards of evidence in comparative research. Political Studies Seminar. Offered primarily for freshman and sophomore Government majors or intended majors.
Duration: Two modules. Dr. Goodman.

169a. SEMINAR: INTRODUCTION TO INTERNATIONAL POLITICS.

A review of basic theories of international politics and major trends in the analysis of international relations. Emphasis will be placed also on the development of analytical skills. Political Studies Seminar. Offered primarily for freshman and sophomore Government majors or intended majors.
Duration: Two modules. Mr. Odenigwe.

170b. POLITICAL STUDIES: AMERICAN POLITICAL BEHAVIOR.

This course will have two major foci: (1) the political attitudes and behavior of the "American Voter" and (2) the political attitudes and behavior of American Congressmen. Topics to be covered include: the social and psychological determinants of voting (and non-voting), the origins and significance of partisan attachments, the development and functions of public opinion, the social backgrounds of Congressmen, their conceptions of their roles and constituencies, and the interaction between voters and their Congressmen. Political Studies Seminar. Offered primarily for freshmen and sophomore Government majors or intended majors.
Duration: Two modules. Dr. Krefetz.

171a. POLITICAL DEVELOPMENT.

Karl Marx wrote, referring to independent, developing countries of his time, "De te fabula narratur" — of you the story is told. Has the story of presently dependent, underdeveloped countries been told? Do the presently industrial countries show the less developed countries the image of their future? We will examine the patterns of development of developed and less developed countries. In the seminar we will criticize major development theories which consider these questions. Political Studies Seminar. Offered primarily for freshman and sophomore Government majors or intended majors.
Duration: Two modules. Mr. Robinson.

202a. U.S. SECURITY: CONTEMPORARY CHALLENGE.

What are the major challenges to American security and foreign policies in the 1970s? Who are our adversaries and what are their aims? How do we assess the threats ahead? A review of international politics in the 1960s and 1970s aimed at developing perspectives on where we are and where we are heading.
Duration: Two modules. Dr. Goodman.

203b. SEMINAR: POLITICS OF CHANGE.

Perspectives on change, its salience to developmental processes, theoretical approaches to assessing its political significance, and survey of interdisciplinary techniques of analyzing change. Case studies of change processes and their political implications. Emphasis on regional and transnational examples.
Duration: One module. Dr. Goodman.

204b. SEMINAR IN AMERICAN PRESIDENCY.

A study of the Constitutional and other powers and functions of the President and the Presidency via selected readings and individual research.
Duration: Two modules. Dr. Cohen.

205a. RECENT POLITICAL THEORY.

A study of modern political theory as developed in the context of the social, political, and economic forces which have shaped Western thought since the French Revolution.
Duration: Two modules. Dr. Rasmussen.

207b. BLACK POLITICAL THOUGHT.

To be offered, 1974-75.

208b. SEMINAR: GOVERNMENT AND POLITICS OF WORCESTER.

An overview of Worcester as an example of an American city as a subject for research. History, ethnic aspects, social and political organizations and problems will be examined. Emphasis on individual research. Preference to graduate students.
Duration: Two modules. Dr. Cohen.

209b. COMPARATIVE GOVERNMENT.

A comparative study of the major West European political systems. Study of the political historic development will lay the basis for comparison of modern functions of government. Stress is placed on political socialization and its importance for comparative politics.
Duration: Two modules. Dr. Rasmussen.

220b. URBAN GOVERNMENT AND POLITICS.

The primary focus of this course is on the various socioeconomic and political inputs that affect the functioning of American urban political systems. What are the resources and constraints which the inputs place upon and provide for the decision-makers? Topics to be discussed include: the social, economic, and political nature of the city, the effects of the state and federal governments, relations between city and suburb, political structures and styles, the distribution of power, and race, ethnicity, and ethos theory. In the latter part of the course some attention will be given to differences in urban policy outputs, primarily in the fields of education and welfare. Where relevant, differences and similarities in the politics of urban areas outside the United States will be considered. Open to sophomores, juniors and seniors.
Duration: Two modules. Dr. Krefetz.

222b. SEMINAR: PUBLIC POLICIES AND AMERICAN CITIES.

What difference does it make "who governs"? What sorts of variations are there among cities in their policy outputs in such areas as welfare, education, poverty, health, the police, and the criminal courts, and what accounts for the differences? After a critical review of the existing literature,

research will be conducted on a policy area of the student's choosing in Worcester and/or other cities. Prerequisite: Govt. 220b or permission of the instructor.
Duration: Two modules. Dr. Krefetz.

223a. SEMINAR: PSYCHOLOGY AND POLITICS.

The seminar will examine the psychological roots of political behavior and will study how political and social existence shape character structure. The various conceptions of man in political theory e.g. (rational) and (irrational) will be examined. We will deal with this problem technically by examining modern American institutions. Various themes, such as parole of the patriarchal family, racism, sexism, and alienation will be pursued.
Duration: Two modules. Dr. Robinson.

224a. BLACK POLITICS IN THE UNITED STATES.

This course will analyze the distribution of power as it affects the Black community. Among those topics to be explored will be: Black congressmen and lobbies, Black politics in cities, the impact of Blacks on the bureaucracy and a comparison of Northern and Southern Black politics.
Duration: Two modules. Dr. Enloe.

225b. POLITICS OF BUREAUCRACIES.

Bureaucracies not only administer policy, they also formulate policy. This course will analyze what it means to be a "bureaucrat," what sorts of powers and pressures bureaucracy handles. Special attention will be given to the United States federal bureaucracy. Among topics to be explored will be the effect of bureaucracy on Indian politics, the relations of bureaus and Congress, the expansion of the White House organization.
Duration: Two modules. Dr. Enloe.

250b. RECENT POLITICAL THOUGHT: THE CASE FOR SCANDINAVIA. Not offered, 1973-74.

Twentieth century political thinking with specific reference to Scandinavian thought. Analysis of the contemporary impact of thinkers such as Kierkegaard, Strindberg, Ibsen and Hans Christian Andersen. The examination of major trends as they constitute either unique Scandinavian developments or reflect a broader European pattern of thinking.
Duration: Two modules. Dr. Rasmussen.

251a. AMERICAN POLITICAL PARTIES AND PRESSURE GROUPS. To be offered, 1974-75.

A study of the structure and functioning of the American party system and the role of selected interest groups in American politics including some ethnic and economic influences. Special emphasis is placed on the processes and problems involved in the nomination and election of the President.
Duration: Two modules. Dr. Cohen.

254a,b. AMERICAN CONSTITUTIONAL LAW.

A study of the major developments and problems of American Constitutional law and judicial behavior approached primarily by analysis of court cases. Govt 254b is the area of civil liberties and includes such issues as freedom of speech, press, and religion, civil rights and selected aspects of the rights of a person accused of crime. Emphasis is placed on recent and contemporary developments and on class discussion. Government 254a duration: 2 Modules.
Duration (a and b): Two modules. Dr. Cohen.

255a. SEMINAR IN THE LEGISLATIVE PROCESS. To be offered, 1974-75.

A study of policy making in Congress, involving problems of legislative organization and procedure, leadership and presidential legislative relationships, examined primarily by the case method and by individual research on particular pieces of recent legislation. Prerequisite: Government 15a.
Duration: Two modules. Dr. Cohen.

256b. PROSEMINAR: AMERICAN CONSTITUTIONAL AND LEGAL HISTORY.

Refer to description under History.
Dr. Campbell.

257a. SEMINAR IN AMERICAN ETHNIC POLITICS. Not offered, 1973-74.

263b. COMPARATIVE PERSPECTIVES ON THE GOVERNMENT AND POLITICS OF MODERN SOUTHEAST ASIA. To be offered, 1974-75.

272a. POLITICS OF CHINA AND JAPAN. Not offered, 1973-74.

A comparative study of the contrasting paths of development taken by the Japanese and Chinese political systems. Among topics to receive special attention will be the conditions for revolution, the role of ideology, the political impacts of war and the strains of modernity.
Duration: Two modules. Dr. Enloe.

273a. SEMINAR: COMPARATIVE ETHNIC POLITICS. Not offered, 1973-74.

This course will investigate the dynamics of political interaction in various multi-ethnic nations. Among those nations to be considered are South Africa, USSR, Britain, Malaysia and Nigeria. Particular focus will be on the ways in which ethnic group developments shape overall national political development.
Duration: Two modules. Dr. Enloe.

274b. POLITICS OF THE AMERICAN SOUTH. Not offered, 1973-74.

Perhaps the most rapidly changing political landscape in the United States is the South. There may even be a question whether "the South" is a distinct political entity in the 1970s. This course will raise that question and consider the ways in which the South stands apart from or merely reflects the larger national political system. The persistence of rural politics, the nature of the new Black politics, the rise of competitive parties will be among the topics analyzed.
Duration: One module. Dr. Enloe.

275a. SEMINAR: CITIZEN PARTICIPATION, ADVOCACY AND DISSENT.

The purpose of the course will be (1) to analyze major theories as to the causes and forms of participation in the polities (2) to examine our understanding of participation in the context of alternative models (e.g., pluralist welfare state, elitist power structure, technological state) of the polity and (3) to review the major means available to the powerless for utilizing participation as a means of creating power. Throughout, the course will establish an interplay between theoretical discussions of the nature of participation and a series of comparative analyses of case studies of participation, including specific attention to advocacy and dissent. One method to be employed in the latter cases will be to examine life histories of advocacy and dissent efforts and biographies of the major actors. Some of the urban decision-making games currently available for educational use will be considered as supplements to the course.
Duration: Two modules. Dr. Kasperson.

276b. AMERICAN POLITICAL BEHAVIOR. Not offered, 1973-74.

An empirical investigation of the variables that determine and condition the political attitudes and behavior of the American public. Special attention will be given to determinants of voting behavior, other forms of political participation, and public opinion, and emphasis will be placed on the effects of individual and aggregate behavior upon the functioning of the political system. The importance of political variables such as party identification, as well as social and psychological variables such as class and perception will be explored systematically. Prerequisite: Government 15a, 159, or permission.
Duration: To be announced. Dr. Krefetz.

279b. POLITICS IN EAST AFRICA.

An examination of the impact of imperialism on the socio-economic structures of Uganda, Tanzania, and Kenya. Considerable attention will be devoted to developing a theoretical framework for studying politics in under-developed countries. The first part of the term will be devoted to the pre-colonial and colonial eras with special emphasis on the historical operations of imperialism in Africa and the types of socio-economic structures given rise to by its impetus. The latter part will focus upon the emergence and role of new states, their relation to political parties, class structure, economy, ideology, army, and to international capitalism. Special attention will be devoted to the questions of African Socialism and revolution in Africa.
Duration: To be announced. Dr. Robinson.

282a. AFRICAN POLITICAL CHANGE.

A survey of political change in sub-Saharan African countries during the colonial and post-colonial eras. Major emphasis will be placed on themes including colonialism, nationalism, political parties, neo-colonialism and revolution. The presently colonial countries will also be studied.
Duration: Two modules. Dr. Robinson.

283b. SEMINAR: SOCIAL CHANGE AND RACE RELATIONS.

A problem-oriented seminar, the goal being to objectify the uniqueness of African-American culture, to examine the socio-political and economic conditions under which it developed, and to relate this to the changing status of African people the world over.
Duration: Two modules. Dr. Robinson.

284a. POLITICS OF INTERNATIONAL RELATIONS.

An analysis of the determinants of one nation's attitudes toward another. Discussion will focus on geographic areas, major conflicts, and the growing tendency toward multinational enterprises and their politics.
Duration: Two modules. Mr. Odenigwe.

285a. POLITICS — MIDDLE EAST.

This seminar will explore several Middle Eastern international political problems — "the Crisis," oil politics and revolutionary insurrection. Readings and discussions will take a comparative foreign policy approach; what factors are unique to or typical of the Middle East which influence international political decisions? The topics to be covered include 1) culture and society, 2) comparative political systems, 3) intra-Middle Eastern relations, and, 4) diplomatic alternatives in the Arab-Israeli conflict and the oil negotiations. Taught in first 7 weeks of Semester I.
Duration: One module.

286b. LOCAL GOVERNMENT AND POLITICAL DEVELOPMENT.

How can the determination of third-world politicians to stimulate social change be reconciled with their ideological committments to broadening political participation? What is the meaning of the word "development" to political scientists, sociologists and economists? And, what are the effects of political decentralization upon these several aspects of development? Students will work with specific cases from such countries as Tanzania, Morocco, Pakistan and Mexico as well as with contemporary theories about the significance of political participation. Taught in first 7 weeks of Semester II.
Duration: One module. Mrs. Schulz.

297. HONORS IN GOVERNMENT AND INTERNATIONAL RELATIONS.

Staff.

370a. POLITICAL SCIENCE RESEARCH: TECHNIQUES AND METHODS.

The major concern of the seminar will be with gaining an understanding of those social science techniques and methods which are most appropriate to conducting political science research. The course will begin with consideration of how one develops a research design, generates hypotheses, and builds theories. General topics to be discussed include casual thinking, the notion of controls, and the concepts of validity and reliability. Specific topics will include survey research, aggregate analysis, content analysis, simulation, correlation and regression analysis and factor analysis. In addition special attention will be given to problems involved with doing cross-cultural research and analyses through time. Open to graduate students and, with permission of the instructor, advanced undergraduates.
Duration: Two modules. Dr. Krefetz.

371a. INTRODUCTION TO INTERNATIONAL URBANIZATION AND PUBLIC POLICY STUDIES.

An intensive review in the modular format of the relationship between urbanization and the development of public policy. Basic literature in the field will be blended with analyses of the development planning process in the U.S. and abroad. Specific topics to be addressed are: What is urbanization? What are its expected and observed political consequences? How do these consequences affect policymakers? What explains the absence of urban development policy in the national development planning context? Taught in the first seven weeks of Semester I.
Duration: One module. Dr. Goodman.

READING, RESEARCH AND THESIS COURSES

87. SOPHOMORE-JUNIOR TUTORIAL PROGRAM.

Staff.

88. DIRECTED READINGS.

Staff.

89. SPECIAL PROJECTS.

Staff.

360. READINGS IN IUPP. Staff.

361. THESIS IN IUPP. Staff.

INTERDISCIPLINARY LISTINGS: FOR UNDERGRADUATE AND GRADUATE PROGRAMS IN THE DEPARTMENT, NOT EXCLUSIVE.

Economics 11. PRINCIPLES OF ECONOMICS.
Staff.

Economics 176. COMPARATIVE ECONOMIC SYSTEMS. Dr. Hsu.

Economics 206. APPLIED MICRO THEORY.
Dr. Wise.

Economics 207b. INTERNATIONAL ECONOMICS.
Dr. Van Tassel.

Economics 327a. INTERNATIONAL TRADE THEORY.
Dr. Hsu.

Geography 130b. THE GEOGRAPHY OF NTERNATIONAL POLITICS.
Dr. S. Cohen.

Geography 230a. POLITICAL GEOGRAPHY AND TS SPACIAL CONSEQUENCES.
Dr. S. Cohen.

Geography 261a. URBAN GEOGRAPHY.
Dr. Karaska.

istory 110a. THE ANCIENT ITY STATE. Not offered, 1973-74.
Dr. Toepel.

History 110b. THE ANCIENT WORLD STATE. Not offered, 1973-74.
Dr. Toepel.

History 208b. PROSEMINAR: TOTALITARIANISM.
Dr. Borg.

History 210a. "OLD EUROPE" AND THE ANCIENT REGIME, 1550-1789. Not offered, 1973-74.

History 210b. THE FRENCH REVOLUTION AND THE COMPARATIVE STUDY OF REVOLUTIONS.
Dr. Lucas.

History 211b. TWENTIETH-CENTURY GERMANY.
Dr. Borg.

History 218a. 18th CENTURY EUROPEAN INTELLECTUAL HISTORY.
Dr. Lucas.

History 218b. 19th CENTURY EUROPEAN INTELLECTUAL HISTORY.
Dr. Lucas.

History 246a. THE AMERICAN CITY.
Dr. Hareven.

History 281a. RUSSIA, 1825-1917.
Dr. VonLaue.

History 282b. SOVIET RUSSIA, 1917-1960.
Dr. VonLaue.

History 295a. PROSEMINAR: GHANA, THE NKRUMAH YEARS.
Dr. VonLaue.

Sociology 105a. INTRODUCTION TO SOCIAL PSYCHOLOGY.
Dr. Fields.

Sociology 243b. POLITICAL SOCIOLOGY.
Mr. Ross.

Sociology 244b. RACE AND ETHNIC RELATIONS.
Mr. Smith.

Sociology 247a. URBAN SOCIOLOGY.
Mr. Ross.

Sociology 249a. PERSPECTIVES ON THE BLACK COMMUNITY IN AMERICA.
Mr. Smith.

Sociology 253b. CONFLICT & POLITICAL PROCESS IN IRELAND.
Dr. Fields.

Sociology 265b. SOCIAL MOVEMENTS.
Mr. Ross.

Sociology 290b. CLASSICAL .THEORY.
Mr. Ross.

HISTORY

DEPARTMENT FACULTY

Theodore H. Von Laue, Ph.D., Jacob and Frances Hiatt Professor of European History, Department Chairman
George A. Billias, Ph.D., Professor of American History
Robert F. Campbell, Ph.D., Professor of American History
Daniel R. Borg, Ph.D., Associate Professor of European History
Richard B. Ford, Ph.D., Associate Professor of African History
Ronald P. Formisano, Ph.D., Associate Professor of American History
Tamara K. Hareven, Ph.D., Associate Professor of American History
Paul Lucas, Ph.D., Associate Professor of European History
Jonathan K. Ocko, Ph.D., Assistant Professor of Asian History
Lori T. Toepel, Ph.D., Visiting Assistant Professor in Ancient History
William A. Koelsch, Ph.D., Associate Professor of American History and Geography; University Archivist; Graduate School of Geography*
Thomas C. Barrow, Ph.D., Affiliate Professor of American History
Marcus A. McCorison, M.S., Lecturer in American History, Director of the American Antiquarian Society

Professor Emeritus in Residence:
Dwight E. Lee, Ph.D., Jacob and Frances Hiatt Professor of European History, Emeritus

*On leave of absence, 1973-74

UNDERGRADUATE PROGRAM

Undergraduate Major: A student majoring in history takes 36 credit hours in history. Of the advanced (200 level) history courses in a major's program, at least eight hours must be in American and at least eight hours in non-American history. An additional twelve hours must be taken in economics, geography, government, psychology, or sociology (as related fields), and, for distribution purposes, 36 hours outside of these fields and of history.

The department recommends, though it does not require, that its undergraduate majors attain proficiency in at least one modern foreign language. Students planning to go on to graduate school are advised that demonstration of competence in one or more appropriate foreign languages is an important consideration in the admissions and fellowship award process of most leading universities. Students should also note that a knowledge of statistics and computer usage is highly desirable for advanced work in history.

Special Programs: Majors in history are encouraged to work out in consultation with their advisor a coherent program of study. Special attention should be paid to opportunities for interdisciplinary programs of study. A few examples follow:

French Studies
English Studies
Black Studies
German Studies
American Studies
Urban Studies
Social History
Intellectual History
Economic History
International Affairs
Political History
Historical Geography

Whatever special program the student chooses to pursue, the Department recommends that he submit to his advisor *in writing* a statement of the purpose of his program and a tentative list of courses. Such conscious planning is desired but not required of the major.

Students may extend the scope of their undergraduate programs through the offerings of cooperating colleges in Worcester, by independent study and research, and in the honors program in history. Further information about these matters is available from the department chairman or other members of the department.

GRADUATE PROGRAM

The principal areas of graduate study are American, English, and modern European history. The department's affiliation with the American Antiquarian Society provides graduate students with the facilities of one of the country's finest research libraries, with over 750,000 volumes and many valuable manuscripts relating to early American history down to 1876. A dozen smaller libraries in Worcester, with combined holdings of over a million volumes, further extend the resources of the Clark Library, as does easy access to Boston, Providence, and New Haven area research facilities.

Course offerings on the graduate level distinguish between reading seminars ("colloquia") and research seminars (simply "seminars"). Whether in the Ph.D. or M.A. programs, students register for a research seminar or an individual research course in each semester of their formal residence, and all students take the Departmental Seminar (300). First and second year students take three courses each semester. Beyond the seminar requirement, students fill out their programs by taking colloquia, additional research seminars, independent study and research courses, and upper-division undergraduate history courses. The chairman initially assigns students to advisors, who help work out individual programs. With the permission of his advisor, a student is encouraged to take suitable courses in other departments.

Master of Arts: Students interested primarily in an M.A. degree and not in the doctorate are normally not admitted to graduate study. The M.A. is awarded to graduate students who have completed the course and one-year residence requirements, have written substantial research papers in two seminars or in individual research courses and have passed the required oral examination.

DOCTOR OF PHILOSOPHY

The traditional doctoral program is designed to enable students to master the discipline of history through research, reading and teaching. In addition to meeting the seminar and course requirements outlined above, a student who enters without an A.M. degree must spend at least three years in full-time residence at Clark, satisfy the language requirement, gain some experience in college teaching, pass a preliminary examination, and write a doctoral dissertation within seven years of matriculation.

Language Requirement: Students concentrating in American and British history must pass an examination in one foreign language: French, German, Spanish, or Russian. Those specializing in European history must pass examinations in two foreign languages, normally French and German. The chairman will designate an examiner in each language, who will determine whether the student is proficient enough to use the language as a research tool. An entering student must take a language examination as soon as it is offered in his first semester of residence, and must have passed this examination by the end of the first calendar year of residence in order to register for his second year. If required, the second language examination should be attempted early in the second year and must be completed before the student registers for his third year. All language requirements must be satisfied before the preliminary oral examination can be scheduled.

Teaching Experience: Some teaching experience at the college level is a prerequisite of the Ph.D. degree. Students normally meet this requirement in their second or third years as teaching assistants.

Fields: Soon after arriving at Clark, the student, in cooperation with his advisor, defines four fields and prepares for them in whatever ways seem appropriate in view of his background and interests. Students specializing in American history normally offer the full scope of American history as two fields. Those concentrating in non-American history normally offer one American field (the dividing line between the two American fields generally falls at 1815). Any student may offer a non-historical subject as a field, usually within the social sciences, or prepare a field in social science theory and research techniques.

Preliminary Examination: One of the four fields is completed early through an oral examination, and the remaining three fields are tested in an oral examination, which must be attempted by the fall of the third year. The two oral examinations over the four fields constitute the "preliminary examination" required by the Graduate Board.

Dissertation: Students are advised to consider and explore dissertation topics during their years of residence and to choose a possible dissertation advisor as soon as possible. The process of writing a dissertation is outlined in a brochure, "Dissertation S.O.P.," which may be obtained from the Department secretary.

Deadline for Completion: All work required for the doctor's degree *must* be completed within a seven-year period after matriculation. In unusual circumstances only, such as involuntary military service or extended illness, the department may grant a specified extension of time.

Note: The course offerings below do not include courses that may be taken through the Consortium of colleges in the Worcester area. The department recommends especially that students consider courses at Holy Cross in medieval, Renaissance and Reformation, and Latin American history.

Unless otherwised indicated, all courses carry four hours credit. The term *colloqium* indicates courses of limited enrollment that center on reading and discussion. The term *proseminar* indicates courses that are likewise limited and combine reading, discussion, and short reports. Finally, the term *seminar* indicates courses of limited enrollment that are organized around a major research paper.

COURSES

NOTE: Freshmen and sophomores may take "200" courses without the consent of the instructors unless instructors decide otherwise (see course listings in registration materials). Students should realize, however, that "200" courses are given on an advanced level and that additional background reading may be desirable before or during the course.

14a. FRESHMAN COURSE: CHINA TO 1644.

The evolution of a unique Chinese social and political order; the great schools of thought; development of a unified empire, state Confucianism, and bureaucracy; conquest dynasties and "the dynastic cycle".

Dr. Ocko.

14b. FRESHMAN COURSE: CHINA 1644 TO PRESENT.

Late imperial China and its decline; Sino-foreign interaction; the search for and discovery of a new order.

Dr. Ocko.

17a. PROSEMINAR: ORIGINS OF CONTEMPORARY AMERICAN THEMES.

Readings and discussion dealing with issues of historical interpretation that relate to contemporary social and political problems.

Dr. Campbell.

18b. PROSEMINAR: MAN AND ENVIRONMENT IN THE AMERICAN PAST.

Not offered, 1973-74.

Readings and discussion relating to environmental cognition, policies and practices in America from earliest times to the present.

Dr. Koelsch.

19a. TRADITIONAL AFRICA.

The development of several pre-European civilizations in Africa, including those of Kush, the Sudanic Kingdoms, the Zanj, Zimbabwe, and Nok-Ife-Benin. An anthropological approach will be used to explore traditional African society and values.

Dr. Ford.

19b. MODERN AFRICA.

A study of differing views on European penetration of Africa, including an analysis of slavery and the slave trade, exploration, the missionary movement, imperialism, and independence, and concentrating on southern Africa and areas of English influence.

Dr. Ford.

110a. THE ANCIENT CITY-STATE.

Not offered, 1973-74.

A comparative study of the social, political, economic and cultural institutions of the ancient Greek and Roman city-state: the duties and privileges of citizenship; empire building and urban development; political theory and practice; death of the ideal through war and revolution. Readings will include both ancient and modern authors.

Dr. Toepel.

110b. THE ANCIENT WORLD-STATE.

Not offered, 1973-74.

A comparative study of the social, political, economic and cultural institutions of the Greek and Roman world-states created by Alexander the Great and Augustus; the effect of he clash between the Hellenistic kingdoms and Rome; kingship in theory and practice; the management of empire and urbanish; the collapse of the world-states. Readings will nclude both ancient and modern authors.

Dr. Toepel.

111b. THE IDEA OF HISTORY IN THE ANCIENT WORLD.

A study of the literary sources for the ancient civilizations of Egypt, the Middle East, Greece and Rome.

Dr. Toepel.

124a. ENGLAND'S "OLD REGIME."

The structure and possible causes of the peculiarities of English state and society compared with continental Europe's from the Middle Ages to about 1800.

Dr. Lucas.

201b. COLLOQUIUM: EUROPEAN SOCIAL HISTORY.

Not offered, 1973-74.

A critical examination of several conceptualizations of, and amous problems in, European social history from the Middle Ages to the twentieth century.

Dr. Lucas.

204a. CURRICULUM DEVELOPMENT AND ANALYSIS IN HISTORICAL GEOGRAPHY.

Cross listed with the Departments of Geography and Education.

Dr. Ford, Dr. Knos and Dr. Schwartz.

208b. PROSEMINAR: TOTALITARIANISM.

A study of the nature of totalitarianism and of the origins, deology, and operation of the German Nazi and Russian Soviet regimes.

Dr. Borg.

210a. "OLD EUROPE" AND THE ANCIEN REGIME, 1550-1789.

A study of the nature and impact of absolutism, mercantilism, early capitalism, and modern science upon "Old Europe" and the system of European states before the French Revolution.

Dr. Lucas.

210b. THE FRENCH REVOLUTION AND THE COMPARATIVE STUDY OF REVOLUTIONS.

An analysis of old and new ideas of revolution, including ritual, resistance, reactionary restoration vs. innovation; of the "democratic" revolution; of the psychology, sociology, and social psychology of revolutionary behavior; and of the relevance of the French Revolution to 20th-century issues.

Dr. Lucas.

211a. NINETEENTH CENTURY EUROPE.

Dr. Borg.

211b. TWENTIETH-CENTURY EUROPE.

Dr. Borg.

215a. MODERN GERMANY.

An examination of the convulsive course of German history over the past century.

Dr. Borg.

217a. PROSEMINAR: WORLD WAR I AND EUROPE.

Dr. Borg.

218a. 18th-CENTURY EUROPEAN INTELLECTUAL HISTORY.

The "Enlightenment" and its critics: the scientific revolution, philosophical reformism, and early conservative romanticism. The emphasis is on methods of intellectual history as focused upon rival perceptions of man's psychological and social nature, history, and aesthetic and religious sensibilities.

Dr. Lucas.

218b. 19th-CENTURY EUROPEAN INTELLECTUAL HISTORY.

The elaboration of the "Enlightenment" by its heirs and critics. The emphasis remains the same as in 218a, but the focus shifts to an analysis of political and economic liberalism, social Darwinism, "utopian" and "scientific" socialism, positivism, nationalism and racism, old and new conservatisms, and the reassessment of the values and progress of European civilization.

Dr. Lucas.

223a. ERA OF THE AMERICAN REVOLUTION.

An analysis of American society in the pre-Revolutionary period with particular emphasis upon the ideological and political developments that led to the War of Independence.

Dr. Billias.

233b. FORMATION OF THE NEW NATION.

An analysis of the American revolutionary experience, political theories in the making of the Federal Constitution, problems of the new government, and developments in the American political tradition through the Jeffersonian era.

Dr. Billias.

235b. THE UNITED STATES IN THE 20th CENTURY.

An analysis of the transformation of America into a modern society and of the tensions and problems of adjustment in this process.

Dr. Campbell.

236a. HISTORICAL METHOD AND CIVIL WAR.

With special reference to the American Civil War as a case study, the course introduces students to the nature of history, problems of objectivity/subjectivity, causation, and research design. The first part of the course is general; while ranging broadly over problems of interpretation, it develops the thesis that history is a social *science.* The remainder of the course analyses in detail events from 1820-1861. Broader comparisons with the Peloponnesian Wars, the Vietnamese Civil War, and others, are briefly considered.

Dr. Formisano.

237b. RIGHT WING MOVEMENTS IN THE U.S. 1790-1970.

Wallace, McCarthyism, American fascism, Social Justice, Red Scare, A.P.A., Know Nothings, Antimasons, Anti-Illuminati, and other movements. (By permission of professor.)

Dr. Formisano.

238b. THE BLACK EXPERIENCE IN AMERICAN HISTORY.

241a. SEMINAR: HISTORY OF AMERICAN HIGHER EDUCATION.

Not offered, 1973-74.

The role of higher education in American life from 1636 to the present, with emphasis on the rise and character of the American university.

Dr. Koelsch.

242b. AMERICAN ECONOMIC HISTORY.

Dr. Campbell.

244b. PROSEMINAR: THE FAMILY HISTORY PERSPECTIVE.

Dr. Hareven.

245a. HISTORICAL GEOGRAPHY OF THE EASTERN UNITED STATES.

Not offered, 1973-74.

Studies in settlement and resource utilization on the eastern seaboard before 1860.

Dr. Koelsch, Dr. Peet.

246a. THE AMERICAN CITY.

Major themes in the social and cultural development of American cities from colonial origins to the present. Focus on the process of urbanization. Comparison with European cities.

Dr. Hareven.

247b. PROSEMINAR: THE PROGRESSIVE ERA.

Dr. Campbell.

248b. PROSEMINAR: ETHNICITY, AND RACE IN AMERICAN HISTORY.

Not offered, 1973-74.

Dr. Hareven.

250a. AMERICAN THOUGHT AND CULTURE: THE GREAT AWAKENING THROUGH THE CIVIL WAR. Not offered, 1973-74.

Emphasis on the shaping effects of the nineteenth-century experience on American ways of thinking.

Dr. Koelsch.

251a. AMERICAN THOUGHT AND CULTURE: CIVIL WAR TO THE PRESENT.

Dr. Campbell.

252b. HISTORICAL GEOGRAPHY: METHODS, TECHNIQUES AND SOURCES.

Dr. Koelsch, Dr. Bowden.

255a. AMERICAN CONSTITUTIONAL HISTORY.

Refer to description under Economics.

Dr. Campbell.

256b. PROSEMINAR: AMERICAN CONSTITUTIONAL AND LEGAL HISTORY.

Dr. Campbell.

260a. THE NAZIS AND THE JEWS: THE HOLOCAUST UNIVERSE.

This course will investigate the origins, development, operational features and fateful consequences of this most traumatic event in all human history. It will draw upon the abundance of historical, biographical, literary and philosophical sources that have become increasingly available in recent years.

Dr. Herbert Rosenblum.

261b. MODERN JEWISH SOCIAL AND INTELLECTUAL HISTORY TO 1870.

A study of the major social and intellectual movements from the Enlightenment to the rise of political anti-Semitism. Topics include: Haskalah, Sabbatianism, Hassidism, Emancipation, Assimilation, the Science of Judaism and the development of denominationalism in Judaism.

Dr. Phyllis Albert.

262b. AMERICAN JEWISH HISTORY TO 1880.

An examination of the community structures and ideological currents that emerged in America, prior to the large scale immigration from Eastern Europe.

Dr. Phyllis Albert.

263a. THE FUTURE, WAYS OF KNOWING AND SURVIVAL.

A lecture and discussion course. Instructors (a historian and a geographer) alternate as lecturers; they will comment on each other's presentations and ideas, leading into class discussion. Students will write a variety of short papers and exercises, and keep a journal of their changing reactions to the course and the subject. Instructors and students will review the possibilities and limitations of "future study", practice trend projections, systems simulation, senario preparation, visioning, and hopefully prepare a more positive and rational attitude toward the future. An upper division course; no prerequisites. Listed jointly with Geography.

Dr. VonLaue and Dr. Kates.

276a. PROSEMINAR: CH'ING SOCIETY.

(Survey course a suggested prerequisite.) An interdisciplinary topical survey of the Ch'ing dynasty at its height: the emperor as man and institution; literature and the arts; the individual and the state; the seeds of destruction.

Dr. Ocko.

277b. PROSEMINAR: CHINA IN REVOLUTION.

(Survey course a suggested prerequisite.) The course will focus on the phases of the Chinese revolution, its major figures and modes of thought.

Dr. Ocko.

280b. RUSSIA TO 1825. Not offered, 1973-74.

A survey of the rise of the Russian Empire, with particular emphasis on the 17th and 18th centuries.

Dr. Von Laue.

281a. RUSSIA, 1825-1917. Not offered, 1973-74.

An outline of Russian development from the early nineteenth century to the collapse of the tsarist regime. The emphasis lies on political history with occasional exploration of literary and economic history as well.

Dr. Von Laue.

282b. SOVIET RUSSIA, 1917-1960. Not offered, 1973-74.

An outline of Soviet development from the Bolshevik revolution to the present, with special emphasis on the formation of the Soviet regime and the rise and fall of Stalinism.
Dr. Von Laue.

283a. RUSSIA IN 1917.

A study of Russia in the year of revolution. Investigation will center on the weakness of the Provisional Government and the causes of the Bolshevik success. Discussion of sources (in English) and a term paper required.
Dr. Von Laue.

290a. PROSEMINAR: PERSPECTIVES OF WESTERNIZATION, 1890-1960. Not offered, 1973-74.

A discussion of the scholarly literature on modernization and westernization, with detailed analysis of select issues.
Dr. Von Laue.

294a. BLACK AND WHITE IN GHANA.

The interaction of African and European cultures on the Gulf Coast and in modern Ghana.
Dr. Von Laue.

295a. PROSEMINAR: GHANA, THE NKRUMAH YEARS. Not offered, 1973-74.

Dr. Von Laue.

296a. PROSEMINAR: PRE-EUROPEAN IN AFRICA.

A consideration of economic, social, and political developments in Africa prior to the arrival of Europeans. Prerequisite: 19a, 19b, or equivalent.
Dr. Ford.

297b. PROSEMINAR: MODERN AFRICA.

Focus on the changes which European policies and values have created in Africa. Prerequisite: 19a, 19b, or equivalent.
Dr. Ford.

88. SPECIAL PROJECTS.

Undergraduates, normally juniors and seniors, may construct an independent research course with an instructor of their choosing. The consent of the instructor must be obtained in advance.
Variable credit. Staff.

89. DIRECTED READINGS.

Undergraduates, normally juniors and seniors, may design a directed readings course to consist of a sequence of structured readings on a given topic to be approved and directly supervised by an instructor.
Variable credit. Staff.

299. DEPARTMENTAL HONORS.

Staff.

300. DEPARTMENTAL SEMINAR.

A survey of some major schools of historical study and of their methods, in search of a suitable historical approach to the contemporary scene.
Dr. Von Laue.

330b. SEMINAR: RISE OF POLITICAL PARTIES IN THE EARLY AMERICAN REPUBLIC.

Ideology, Aims, and Practices of the Federalists and Jeffersonian Republicans.
Dr. Billias.

338a. SEMINAR: U.S. SOCIAL HISTORY.

Industrial experience in conjunction with Sturbridge Village.
Dr. Hareven.

339a. SEMINAR: AMERICAN URBAN HISTORY. Not offered, 1973-74.

The focus falls on the American adjustment to the urban, industrial experience. Research will utilize original sources in Worcester and other New England towns.
Dr. Hareven.

342a. COLLOQUIUM: THE LITERATURE OF AMERICAN HISTORY (to 1815).

Dr. Billias.

343b. COLLOQUIUM: THE LITERATURE OF AMERICAN HISTORY (since 1815).

Dr. Formisano.

382. STUDIES IN EARLY MODERN EUROPEAN HISTORY.

Dr. Lucas, Dr. Borg.

383. STUDIES IN MODERN EUROPEAN HISTORY.

Dr. Borg, Dr, Von Laue.

384. STUDIES IN MODERN BRITISH HISTORY.

Staff.

385. STUDIES IN RUSSIAN HISTORY.

Dr. Von Laue.

386. STUDIES IN CHINESE HISTORY.

Dr. Ocko.

388. STUDIES IN AFRICAN HISTORY.

Dr. Ford, Dr. Von Laue.

391. STUDIES IN 18th-CENTURY AMERICAN HISTORY.

Dr. Billias.

392. SEMINAR: AMERICAN POLITICAL HISTORY.

U.S. Political History: Methods and Topics. Concentration on topics selected by professor and students, with special attention to interdisciplinary methods and the most recent works in political history.

Dr. Formisano.

393. STUDIES IN RECENT AMERICAN HISTORY.

Dr. Hareven.

394. STUDIES IN RECENT AMERICAN HISTORY.

Dr. Campbell.

395. STUDIES IN AMERICAN INTELLECTUAL HISTORY.

Dr. Beck.

398. STUDIES IN COMPARATIVE HISTORY.

Dr. Von Laue.

400. THESIS RESEARCH.

Staff.

JEWISH STUDIES

The following courses relating to Jewish studies are offered in the 1973-74 academic year in various departments or as an interdepartmental discipline. For description and details please check the course listings within the departments.

Dr. Zeev Raviv, Coordinator.

Fall Semester (1973)

Department of Foreign Languages and Literatures

Hebrew 11. ELEMENTARY MODERN HEBREW.

Ms. Raviv.

Hebrew 12. INTERMEDIATE MODERN HEBREW.

Ms. Raviv.

Hebrew 130. ADVANCED MODERN HEBREW.

Ms. Raviv.

Hebrew120a. HEBREW SCRIPTURES: PROPHETIC AND WISDOM LITERATURE.

Rabbi Klein.

***Hebrew 125a. BIBLICAL TORAH COMMENTARY: THE FOUR LEVEL APPROACH.**

Rabbi Fogelman.

***Yiddish 10. INTRODUCTORY YIDDISH.**

Rabbi Goldman.

Hebrew 185a. TRENDS AND VALUES IN YIDDISH LITERATURE.

Mr. Goldsmith.

Department of History

History 260a. THE NAZIS AND THE JEWS: THE HOLOCAUST UNIVERSE.

Mr. Rosenblum.

Independent-Nondepartmental

***Ind. 125a. PHILOSOPHY OF THE CHASIDIC MASTERS.**

Development of concepts of Chasidic thoought will be traced and analyzed with application to contemporary Jewish practice. Examination of the personalities of Chasidic thinkers will be included.

Mrs. Chaim Fishman.

Third & Fourth Modules (Spring, 1974)

Department of Foreign Languages and Literatures

Hebrew 11. ELEMENTARY MODERN HEBREW.

Ms. Raviv.

Hebrew 12. INTERMEDIATE MODERN HEBREW.

Ms. Raviv.

Hebrew 130. ADVANCED MODERN HEBREW.

Ms. Raviv.

Hebrew 150b. AMERICAN JEWISH LITERATURE OF SURVIVAL, 1850 TO THE PRESENT.

Mr. Goldsmith.

***Hebrew 135b. TALMUDIC THOUGHTS AND LOGIC: AN INTRODUCTORY ANALYSIS.**

Rabbi Chaim Fishman.

***Yiddish 10. INTRODUCTORY YIDDISH II.**

A continuation of Introductory Yiddish, the course will include conversational Yiddish idiomatic expressions absorbed into other languages, and dialects of Yiddish spoken in various parts of the world. Prerequisite: Introductory Yiddish or its equivalent.

Rabbi Gordon.

Department of History

History 262b. AMERICAN JEWISH HISTORY TO 1880.

Dr. Albert.

History 261b. MODERN JEWISH SOCIAL & INTELLECTUAL HISTORY TO 1870.

Dr. Albert.

School of Geography

Geography 288b. ISRAEL'S CHANGING GEOGRAPHICAL LANDSCAPES (MAN-ENVIRONMENT-SYSTEMS).

Dr. Cohen.

Independent-Nondepartmental

***Ind. SYNOPTIC COURSE OF THE HISTORY OF THE JEWISH PEOPLE.**

This course will survey the history of the Jews from their origins in the ancient East to their position on contemporary life. While mainly concerned with the experiences of the Jewish people in various countries and empires through the centuries, it will also call attention to the factors that influenced them. These conditions, both internal and external, have had a lasting effect upon Jewish life and belief. The various contributions made to Western Civilization will be analysed from their first emergance into society, to their eventual acceptance in daily life. Emphasis will be put on the events of watershed importance, in addition to pointing out the seemingly minor occurances, among which are many events which in the long run did have a strong bearing on the future.

Mrs. Israel.

*These courses are offered at Clark through the cooperation of Yeshiva Day Academy of Worcester County and are taught by their instructors.

INGUISTICS

15. MAN AND LANGUAGE.

introduction to the analysis of the nature and function of man language and its role in the life of individuals and cieties. The approach is interdisciplinary with attention to e points of view of philology, contemporary linguistics, thropology, psychology and philosophy. The lectures cus on such questions as: What is language? What is the lation between language and thought? To what extent does r language determine how we perceive the world? Why and w do languages change? What other functions does nguage serve besides communication? Why do we not have world language? How have linguists achieved an objective, ientific analysis of linguistic systems? What are the limitans of such a science?

The course is designed for the general student who wishes know more about the nature of the uniquely and univerlly human institution of language, and for the student or acher of English or foreign language who is interested in e light which linguistic science can throw upon the lations between his field and other areas of life and owledge.

The first half of this course is devoted to lectures and the cond is a seminar in which members of the group report in pth on problems of their choosing. Offered in alternate ars. Prerequisite: consent of the instructor.

Dr. Reid.

0a. LINGUISTICS AND LANGUAGE LEARNING.

lso designated Education 260a.)Not offered, 1973-74.

exploration of various fields of linguistic study from the int of view of their relevance to foreign language learning. tended to meet the needs of two classes of students: (1) ospective foreign language teachers who already have lvanced mastery of their foreign language; and (2) other udents with a more general interest in the nature of nguage, whose primary orientation may be toward related oblems in, for example, psycholinguistics or sociolguistics.

Approaching language as *behavior* and as *system,* the urse directs attention to the levels ranging from the culture stem to the system of the language as a whole, and finally to its subsystems: lexical, grammatical and phonological.

Offered in alternate years. Prerequisite: consent of the instructor.

Dr. Reid.

285a. SEMANTICS.

This course studies meaning. It deals with and classifies the changes in the meanings of words and phrases, and it analyses simile and metaphor. It also deals with the parametric organization of the semantic system. Some attention is paid to the relation between thought and language. Offered at the discretion of the English Department. Prerequisite: consent of the instructor.

Dr. Macris.

287a. INTRODUCTION TO LINGUISTICS.

Not offered, 1973-74.

This course is devoted to the theory and methodology of descriptive linguistics. It deals with the nature and function of language, the relation between speech and writing, phonology, morphology, syntax, lexicology, the sociocultural setting of language, the contact of linguistic systems, and the problems of "correctness." Emphasis is placed upon the dynamics of systems analysis. Offered at the discretion of the English Department. Prerequisite: consent of the instructor.

Dr. Macris.

288b. COMPARATIVE AND HISTORICAL LINGUISTICS.

This course examines the theory and methodology of comparative and historical linguistics. It focuses on linguistic geography, linguistic borrowing, the causes of linguistic change, the comparative method and reconstruction, and problems in analyzing languages with and without a literary tradition. Emphasis is placed upon the dynamics of systems analysis. Offered at the discretion of the English Department. Prerequisite: consent of the instructor.

Dr. Macris.

Education 336a. LANGUAGE AND COGNITIVE DEVELOPMENT.

Refer to description under education.

Dr. Judith T. Guskin.

English 280. HISTORY OF THE ENGLISH LANGUAGE [250].

Refer to description under English.

Dr. Macris.

English 282b. SEMINAR: OLD ENGLISH [255b].

Refer to description under English.

Dr. Macris.

English 284b. SEMINAR: MODERN AMERICAN ENGLISH [260b]. Not offered, 1973-74.

Refer to description under English.

Dr. Macris.

English 286b. SEMINAR: LINGUISTIC APPROACHES TO LITERATURE [261b]. Not offered, 1973-74.

Refer to description under English.

Dr. Macris.

English 295b. TEACHING ENGLISH AS A SECOND LANGUAGE.

Refer to description under English.

Dr. Macris.

Philosophy 113a. PHILOSOPHY OF LANGUAGE.

Refer to description under philosophy.

Dr. Hollinger.

Psychology 232a. PSYCHOLOGY OF LANGUAGE. Not offered, 1973-74.

Refer to description under psychology.

Dr. Kaplan.

MANAGEMENT

DEPARTMENT FACULTY

Balko, George A., Jr., M.B.A.
Burmeister, Robert W., Ph.D.
Cordwell, Wesley E., Jr., M.A.
Goldberg, Lawrence, Ph.D.
Juralowicz, Richard, Ph.D.
Kane, Donald D., M.A.
Kilty, Daniel R., Ph.D.
Moody, Harold T., Ph.D.
Murray, Lawrence W., Jr., Ph.D.
Nath, Lawrence H., Ph.D.
Scull, Robert W., Ph.D.

THE PROGRAM

The Department limits itself to a graduate program leading to the M.B.A. degree. The program is small and extremely flexible, designed to allow the participation of students interested in a wide range of organizations, both profit and non-profit.

The program has unique features which should be evaluated by the prospective student in the light of his interests and preferences. First, only the most important topics in the study of management are included: marketing, capital investment analysis, information systems, behavioral science, and organizational change. These topics are applied to a wide variety of organizations. Second, to complete the graduate program, the student must create a part of his program in conjunction with the faculty, administration, and other students. The Department regularly schedules courses and seminars only in the above five fields. Thus, workshops, special courses and other forms of educational projects must be continually created by the students. Experts from both academic and practicing backgrounds are brought into the program temporarily to meet the changing demands. Third, the Department is not solely committed to the study of business organizations. The faculty believes the study of management applies to all organizations, non-profit as well as profit. Consequently, the theoretical core of each field of study is emphasized, and descriptive institutional material is used to particularize the core. The mix of students in the program, including current and future managers of educational, health, religious, government and business organizations, forces the faculty to focus on the universal principles of managing. Fourth, all departmental courses and seminars are scheduled in the late afternoons and evenings. These hours do not mean it is an evening program for part-time students, with a separate program in the daytime for full-time students. It is one program, with both part and full-time students attending the same courses, seminars and special projects. This aspect of the program contributes a unique atmosphere in which students learn from each other's wealth of different practical and academic experience.

A graduate program of 30 semester-hours is required, which can be completed in one academic year. Prior to graduate study, a basic knowledge in 12 subject areas must be demonstrated. These prerequisites are not waived on the basis of previous academic or other experiences because of the great variability in coursework and memory span of students. Although inconvenient for some, the required demonstration of knowledge results in a better graduate education for all. While individual study and the taking of waiver examinations is urged, the Department offers the 12 subjects as half-semester courses for those who would prefer them.

ADMISSION TO THE PROGRAM

All undergraduate majors are given equal weight in the admission decision. Persons interested in the program should request a Bulletin from the Department. Those wishing to apply should complete the accompanying application form and return to the Department with the $10. fee. When all supporting documents have been received, the application is considered by the admissions committee, which meets monthly through the academic year. Admission is for September or February.

TUITION

$1,400. per semester, or $95 per semester hour credit.

MATHEMATICS

DEPARTMENT FACULTY

John F. Kennison, Ph.D., Professor of Mathematics, Department Chairman
Zalman Rubinstein, Ph.D., Professor of Mathematics*
Norman Sondak, Dr. of Eng's., Professor (Affiliate) of Mathematics
Robert W. Kilmoyer, Jr., Ph.D., Associate Professor of Mathematics
Herb Silverman, Ph.D., Associate Professor of Mathematics
Bhama Srinivasan, Ph.D., Associate Professor of Mathematics
John S. Stubbe, Ph.D., Associate Professor of Mathematics*
Sidney C. Garrison, Ph.D., Assistant Professor of Mathematics
Stanley J. Poreda, Jr., Ph.D., Assistant Professor of Mathematics
David E. Tepper, Ph.D., Assistant Professor of Mathematics
Ruth A. Cornish, M.Sc., Visiting Instructor of Mathematics
George S. Shapiro, A.M., Instructor in Mathematics

*On leave of absence, 1973-74.

UNDERGRADUATE PROGRAM

A. For the General Student:

The geometry course (Math 124) and the math models course (Math 100) offer different perspectives of mathematics that should interest both the specialist and the non-specialist. The geometry course illustrates the mathematical approach in the context of visual concepts. The models course explores the role of mathematics as a language that is used and abused in many applications to the business, military and economic worlds. These courses are not overly demanding from a technical viewpoint.

The calculus courses (Math 12, 13, 15, 16) are technically demanding but present a powerful and elegant subject. Math 12 is the standard first year calculus course while Math 16 is the honors calculus. Math 15 gives a novel approach to this subject, relating to Probability Theory. The calculus courses are sectioned and tend to be relatively small. Freshmen may start in the Fall with 12a, 12b, (second semester's work), 15, 16, or 13 (second year of calculus). Students who feel rusty may first register for the Math Clinic and Tutorial (Math 10). This course has no scheduled class times but employs conferences and is designed to meet individual needs.

B. Special Technical Needs:

In addition to Math 10 and the calculus courses the department offers certain courses that will be technically useful. Our probability and statistics course (Math 117) is fairly comprehensive and important for the social sciences. Math 150 is important for math education. Math 170 and Math 245 are of use to physical science majors. Courses such as Math 135 entail useful experience on the computer.

Students may avail themselves of the math faculty for projects that require mathematics (Math 88, 89 and 200). Math 100 seems to introduce the student to the possibility of such projects. Non-math majors with a special interest in mathematics are invited to "minor" in mathematics particularly by enrolling in Math 200 when they are ready to pursue a fairly large project. The department intends to provide individual attention and special evaluations.

C. The Math Major:

The major is designed to meet the needs of students who are interested in either pure or applied mathematics or in math education or in computing science. Although demanding, it is flexible and can accommodate prospective actuaries, teachers, computer scientists, students planning on graduate work in mathematics or the social sciences or in certain professional schools. The requirements are:

(I.) Ten semester courses in mathematics at or beyond the level of Math 12. (Up to four semester courses in computer science beyond 111 may be substituted.) At least two semester courses on the 200-level (or the equivalent — see below) must be included. Math 13 and 113a should normally be taken in the sophomore year.

(II.) Three semester courses from one of the following areas: biology, chemistry, computer science, economics, geography, geology, philosophy, physics, psychology, sociology.

(III.) At least 9 courses from other than Group A courses and certain courses in computer science, economics, geography and psychology which depend heavily on mathematics. In each case please consult with the department.

The purpose of the 200-level requirement is to insure that a major's program has depth or emphasis. For students interested in math education this requirement can be met by taking the education module and the math education course (Math 150). For students taking other similar courses through the Consortium, please consult with the department to see if the 200-level requirement is met.

GRADUATE PROGRAM

The department offers courses leading to the degrees of Master of Arts and Doctor of Philosophy.

The requirements for the M.A.* are as follows: (1) four courses on the 300 level, except that, with the consent of the department, a student may substitute two courses below the 300 level in place of one beyond; (2) a Master's thesis; and (3) an oral examination.

A student working toward the Ph.D. degree and electing to omit the M.A. thesis and M.A. oral examination will be recommended for the M.A. degree upon successful completion of the Ph.D. Preliminary Examination.

The requirements for the Ph.D.*, in addition to the general requirements of the Graduate School, are as follows: There are four "tracks" by which a student may be recommended for admission to Ph.D. candidacy: (1) Written examination; (2) Oral examination; (3) Special project; (4) Waiver (in extraordinary cases). The decision as to which track shall apply is made by the advisor in consultation with the student. The advisor will submit the choice of track to the department for final approval. Students should discuss this matter with their advisors by November of their second year. (Students entering with a Master's degree should discuss this immediately.) Note: New courses and graduate instructorships are subject to final approval.

In all cases except the waiver, a committee of at least three will be appointed by the chairman. If the examination or project is satisfactory, the committee will advise the department, which will make the recommendation to the Graduate School.

The language requirement will be considered to have been fulfilled if the candidate can demonstrate sufficient linguistic ability to carry on effective research in his or her field. The department's decision will depend heavily upon the recommendation of the candidate's advisor.

*All candidates for the M.A. and Ph.D. degrees in Mathematics will be required to serve as teaching assistants or as assistants in the Computing Center as part of the work for their degrees.

COURSES

11a. INTRODUCTION TO MATHEMATICS.

Not offered, 1973-74.

ntended for the general student, the course treats topics in he foundations of mathematics and its role in today's world.

10. MATH CLINIC AND TUTORIAL.

ndividual conferences, diagnostic tests, programmed exercises and projects are used to develop mathematical skills, concepts and confidence. This course does not involve classes but relies on a one-to-one approach.
Variable course Dr. Kennison.

12. CALCULUS.

ntroduction to differential and integral calculus of one variable; sequences and series; essential for further study in mathematics as well as for the study of applications in the natural sciences. Not open to students who have taken Math 5 or 16.

Dr. Poreda and Staff.

13. INTERMEDIATE CALCULUS.

This course assumes the knowledge of one variable calculus and will deal with functions of several variables. Partial derivatives, multiple integrals, line and surface integrals and their applications will be among the topic covered. Prerequisite: Mathematics 12.

Ms. Cornish.

14. MATH FOR ELEMENTARY SCHOOL TEACHERS.

Required mathematics for those who plan to teach in elementary school.

Dr. Silverman.

15. PROBABILITY AND CALCULUS FOR THE SOCIAL AND LIFE SCIENCES.

A course designed to acquaint the student with the foundations of probability and calculus. Emphasis will be on their applications, uses and abuses. Essential to those who want a solid background for questioning statistical assumptions. Not open for credit to students who have taken Math 12 or 16.

Dr. Garrison.

16. HONORS CALCULUS.

A two semester calculus sequence designed primarily for math majors. Two course value.

Dr. Kilmoyer.

88. DIRECTED READINGS IN MATHEMATICS.

Variable course value. Staff.

89. SPECIAL PROJECTS IN MATHEMATICS.

Variable course value. Staff.

100. MATHEMATICAL MODELS.

The method of analyzing various situations by analogy with mathematical models is explored. The course includes criticism and discussion of models constructed by students and experiments with mathematics as a language.

Dr. Kennison.

113a. LINEAR ALGEBRA.

Systems of linear equations, matrices and determinants, vector spaces, linear transformations, eigenvalues and canonical forms.

Dr. Garrison.

115b. INTRODUCTION TO GROUP THEORY.

An introduction to fundamental concepts such as sets, mappings, equivalence relations, rings, integral domains, fields, and groups.

Dr. Garrison.

117. PROBABILITY AND STATISTICS.
(Formerly Math 117a and 118b).

Basic topics from probability theory and statistics. Applications to the natural and social sciences are considered. Prerequisite: Math 12 or consent of the instructor.

Mr. Shapiro.

124a. INTRODUCTION TO GEOMETRY.
(Formerly Math 125b).

Topics from projective geometry, non-Euclidean geometry, foundations of Euclidean geometry and topology. Prerequisite: Equivalent of Mathematics 11.

Dr. Srinivasan.

125b. THEORY OF NUMBERS. (Formerly Math 124a).

A study of some properties of divisibility, prime numbers, congruences and residues. Prerequisite: Equivalent of Mathematics 11.

Dr. Srinivasan.

135. PATTERN RECOGNITION. Not offered, 1973-74.

The development of computerized methods for recognizing, in a larger collection, a sub-set of "points" which has a "group" property; for determining groups having certain properties in common regardless of shape and size; and for calculating the most probable properties of a partially constructed (or partially hidden) group. The 19 by 19 Japanese Go Board will be used as a model.

Dr. Stubbe.

140b. INTRODUCTION TO MATHEMATICAL LOGIC.

A course designed to show the student how to construct a formal system and proofs within it. Topics to be covered include propositional and predicate calculus.

Staff.

150. SEMINAR IN MATHEMATICAL METHODS AND MATERIALS.

The purpose of this course is two fold: (1) to acquaint the student with various methods of approach for theories on teaching math on the secondary school level, and (2) to give the student a pre-student-teaching experience. While conducting mini-courses in math with South High School and the Alternative School, the seminar discusses articles that are concerned with teaching math, the relationship of the theories to the practice, the problems that are encountered within the mini-courses, and methods of teaching math. Various field trips and guest speakers will be included.

Dr. Tepper.

153a. ACTUARIAL SCIENCE. Not offered, 1973-74.

This course will deal with the mathematics of finance and its application. Interest, annuities, valuations, depreciation, mortality tables and life insurance are among the areas that will be covered. Prerequisite: Mathematics 11 or the equivalent.

154b. INTRODUCTION TO LINEAR PROGRAMMING AND GAME THEORY. Not offered, 1973-74.

An introductory course developing the basic mathematical tools of linear programming and game theory and investigating their applications to business, science and the military. Computer application will also be discussed. Prerequisite: Mathematics 113a.

170a. FINITE REFLECTION GROUPS. Not offered, 1973-74.

The objective of this course is the classification of finite groups generated by reflections in a finite dimensional Euclidean vector space. Included will be such topics as finite subgroups of the orthogonal group in low dimensions, crytallographic groups, fundamental regions, root systems, and generators and relations.

Dr. Kilmoyer.

200. COMPREHENSIVE TUTORIAL.

This course is intended for students pursuing advanced projects that involve mathematics. These projects might arise from mathematics or from some other discipline. Signature required.
Variable course value.

Staff.

212a. NUMERICAL ANALYSIS.

Calculus of finite differences, introduction to the theory of interpolation, error analysis, direct and iterative methods for solving equations and systems of equations. Prerequisite: Mathematics 13.

Ms. Cornish.

214. MODERN ANALYSIS.

Topological and metric methods are introduced and studied. These generalize and explain many ideas first encountered in calculus. These methods will be applied to study differentiation, integration and convergence, among other topics, in greater depth. Prerequisite: Mathematics 13 and 113a or consent of the instructor.

Dr. Silverman.

215. MODERN ALGEBRA.

Intended for the prospective graduate student in mathematics. It introduces the theory of groups, rings, integral domain, fields, and related topics. Prerequisite: Mathematics 113 or consent of the instructor.

Dr. Srinivasan.

220. COLLOQUIUM IN PURE RESEARCH.

Not offered, 1973-74.

This course if offered for students wishing to obtain a general view of the current research in mathematics as done by the staff. Prerequisite: Good mathematical background and consent of the chairman.

Staff.

221b. CALCULUS OF VARIATIONS.

Not offered, 1973-74.

Euler's equations, canonical forms, classical examples, soparametric problems, variational principles, Hamilton-Jacobi theory. Corequisite: Mathematics 13.

244a. DIFFERENTIAL EQUATIONS.

Not offered, 1973-74.

Topics will include methods of solution and qualitative heory of first order and linear ordinary differential equations. Prerequisite: Mathematics 113a.

245b. APPLIED MATHEMATICS.

Not offered, 1973-74.

This course covers topics from advanced calculus which are useful for applications to the sciences.

Staff.

247. OPERATIONS RESEARCH.

Linear Models, Linear Programming, the simplex method, ensitivity analysis and network analysis are covered in first emester. Second semester covers Dynamic programming. Prerequisites: Mathematics 12, 113a and Computer Science 01a.

Dr. Poreda.

290. TOPICS IN ANALYSIS.

Content will be changed from year to year.

Staff.

291. TOPICS IN ALGEBRA.

Content will be changed from year to year.

Staff.

292. TOPICS IN TOPOLOGY.

Content will be changed from year to year.

Staff.

293. TOPICS IN GEOMETRY.

Content will be changed from year to year.

Staff.

298. HONORS I.

Staff.

299. HONORS II.

Staff.

300b. SETS AND TOPOLOGY.

The foundations of set theory and the relationship of various fundamental axioms, such as Zorn's lemma and the Axiom of Choice. Point-set topology as far as the Hahn-Mazurkiewicz Theorem.

316. FUNCTIONS OF A COMPLEX VARIABLE.

Analytic functions, line integrals, conformal mapping. Riemann surfaces. Prerequisite: Mathematics 214 or consent of the instructor.

Dr. Tepper.

318. FUNCTIONS OF A REAL VARIABLE.

The real number system, topology, measure theory and related topics. Signature required.

Mr. Shapiro.

321. ALGEBRAIC TOPOLOGY.

Not offered, 1973-74.

Introduction to algebraic topology including fibrations and coverings, homotopy and homology. The relation with category theory will be emphasized. Prerequisites: Mathematics 215 and 318 or consent of the instructor.

323. UNIFORM SPACES. Not offered, 1973-74.

Elementary theory, function spaces and the exponential law, mappings into polyhedra, compactifications, fine spaces, dimension theory. Prerequisite: Mathematics 318 or consent of the instructor.

325. ADVANCED MODERN ALGEBRA.

Galois theory, group theory, Wedderburn structure theorems for rings and linear algebras, introduction to algebraic number fields. Prerequisite: Mathematics 215.

Staff.

326. SELECTED TOPICS IN COMPLEX ANALYSIS. Not offered, 1973-74.

Topics selected from the theory of univalent and multivalent functions, geometric function theory, zeros of polynomials and extremal polynomials. Prerequisite: Mathematics 316 or consent of the instructor.

327. FUNCTIONAL ANALYSIS. Staff.

330. MASTER'S THESIS. Staff.

333. TOPOLOGICAL FUNCTION SPACES. Not offered, 1973-74.

Various topologies for sets of functions are studied and their properties determined. Emphasis on the exponential laws. Ascoli-Arzela theorems, and applications to point-set topology. Prerequisites: Mathematics 318 or consent of the instructor.

335. SELECTED TOPICS IN ALGEBRA.

Prerequisites: Mathematics 325 or consent of the instructor.

Dr. Kilmoyer.

341. DIFFERENTIAL EQUATIONS. Not offered, 1973-74

Ordinary differential equations, theory and techniques of solutions. Partial differential equations. Fourier transform, distributions and their applications.

358b. CATEGORY THEORY.

Introduction to the basics of category theory.

Staff.

376. REPRESENTATION THEORY OF FINITE GROUPS. Not offered, 1973-74.

Prerequisite: Mathematics 325 and consent of the instructor.

381. SEMINAR IN COMPLEX VARIABLES. Staff.

382a. SEMINAR IN ABSTRACT ANALYSIS. Staff.

383. SEMINAR IN ALGEBRA. Staff.

384. SEMINAR IN CATEGORY THEORY. Staff.

390. READINGS IN MATHEMATICS.

Reading of the mathematical literature related to the student's research program.

Staff.

391. RESEARCH IN MATHEMATICS.

Direction of the Ph.D. dissertation.

Staff.

PHILOSOPHY

DEPARTMENT FACULTY

Albert A. Anderson, Ph.D., Associate Professor of Philosophy
Robert N. Beck, Ph.D., Professor of Philosophy, Chairman*
Robert Hollinger, Ph.D., Visiting Assistant Professor of Philosophy
Gilbert S. Markle, Ph.D., Associate Professor of Philosophy†
Gary E. Overvold, Ph.D., Associate Professor of Philosophy
Walter E. Wright, Ph.D., Assistant Professor of Philosophy

*On leave of absence, 1973-74.
†Part-time, 1973-74.

UNDERGRADUATE PROGRAM

The department offers courses to students who wish to broaden their perspective and trace relations among the various fields of knowledge and to students who wish to major in philosophy.

The major consists of at least 8 semester courses in philosophy which should include either Phil. 11b. or Phil. 18b, two courses from the Phil. 120 series, and a seminar. An additional 6 semester courses in related fields is required. These are determined according to the student's special interest. Course programs for majors require approval of the departmental chairman.

The outside field requirement in philosophy of 36 semester hours requires specific course determination. Courses credited toward this requirement must be individually approved by the departmental chairman as part of the major's program.

It is expected that majors take at least their upper-level courses in philosophy on a graded basis.

COURSES

11a. INTRODUCTION TO LOGIC.

Logic as philosophy and practice. An introduction to the meaning of logical reasoning with a study of its principles and methods. An investigation of the philosophical presuppositions of logic.

Dr. Beck, Dr. Overvold.

12b. PROBLEMS OF PHILOSOPHY.

Nature and method of philosophy. Application of philosophical method to contemporary personal and social problems. Detailed analysis of some typical problems in various fields of philosophy.

Dr. Anderson, Dr. Beck.

Philosophy 120 series is organized in four semester-courses, I, II, III and IV.

121a. HISTORY OF ANCIENT PHILOSOPHY I.

Movements of philosophical thought from their origins with the early Greeks through Plato and Aristotle. Prerequisite: one semester course in philosophy.

Dr. Anderson.

122b. HELLENISTIC AND MEDIEVAL PHILOSOPHY II.

Not offered, 1973-74.

Developments in Hellenistic and medieval philosophy from Epicureanism, Stoicism, Skepticism, and Neo-Platonism through Augustine, Aquinas, and William of Occam to the attack on scholasticism. Prerequisite: Philosophy 121 or 12.

123b. HISTORY OF MODERN PHILOSOPHY III.

Major thinkers and philosophical movements from the beginnings of the modern period in Descartes through Kant. The two great trends in modern thought — Continental Rationalism and British Empiricism — will be examined in particular regard to their implications for, and effects upon, our contemporary view of the world. Prerequisite: one semester course in philosophy or History 10.

Dr. Beck, Dr. Hollinger.

124a. HISTORY OF RECENT PHILOSOPHY IV.

An investigation of the major types of philosophical thought distinctive to recent philosophy: Pragmatism, Logical Positivism, Ordinary Language Philosophy, Existentialism, and Phenomenology. Emphasis upon each as a coherent perspective upon experience with a focus on the style and methodology of each view. Prerequisite: Philosophy 123b.

Dr. Overvold.

13a. PROBLEMS OF ETHICS. Not offered, 1973-74.

Consideration of important ethical theories to acquaint students with the problems and scope of ethics and to aid him in the formulation of an ethical outlook. Open to juniors and seniors.

Dr. Beck.

13b. SOCIAL PHILOSOPHY. Not offered, 1973-74.

Principles underlying social structure and functions. Examination of the goals, purposes, norms and ideals of social process, and the relation of that process to the individual good. Open to juniors and seniors.

Dr. Beck.

131a. PERSONAL VALUES.

Exploration of philosophical approaches to the fundamental human value problems such as truthfulness, sexual integrity, love, violence, war, and death. The connection between personal value choices and ethical theories will be studied. Limited course, preference to freshmen.

Dr. Wright, Dr. Beck.

171b. SCIENCE AND HUMAN VALUES.

Theoretical and practical issues concerning the interrelations between science and human values. Values in scientific method, technology and values, pure and applied sciences, science and ethical relativism. Views of man in natural and social sciences and their connections with values and methodology.

Dr. Hollinger.

14a. KIERKEGAARD AND NIETZSCHE.

Investigation of the roots of contemporary existential thought in the nineteenth century through the analysis of major writings by Søren Kierkegaard and Friedrich Nietzsche. Emphasis on their doctrines of knowledge, existence and man. Open to juniors and seniors. Prerequisite: one semester course in philosophy.

Dr. Overvold.

14b. NINETEENTH AND EARLY TWENTIETH-CENTURY GERMAN PHILOSOPHY.

Trends in philosophy during this period considered as a background for understanding recent philosophy. Philosophers to be studied include Fichte, Hegel, Schopenhauer, Nietzsche, Marx, Engels and Comte. Prerequisite: Philosophy 123b.

Dr. Wright.

140a. KANT. Not offered, 1973-74.

Immanuel Kant viewed as a synthesis of the traditions of Continental Rationalism and British Empiricism. Prerequisite: two semester courses in philosophy, including Philosophy 123b.

15a. PHILOSOPHY OF RELIGION.

The nature of religion as revealed by the examination of representative forms of religious experience. Emphasis is placed on the effect of contemporary knowledge on the understanding of the religious dimension. Open to juniors and seniors. Prerequisite: one semester course in philosophy.

Dr. Wright.

16a. ESTHETICS.

The nature of art, the characteristics of esthetic experience, and the relation of art to the human enterprise as a whole. Special reference is made to representative figures in contemporary philosophy such as Santayana, Veron, Dewey, Weitz, Macdonald, Bosanquet, Langer, Hume, and T.H. Greene. Open to juniors and seniors. Prerequisite: one semester course in philosophy.

Dr. Anderson.

16b. METAPHYSICS.

Clarification of the nature of metaphysical thinking and views of representative philosophers on the nature of space, time, causality, matter, force, self-identity, mind, body, and freedom. Prerequisite: two semester courses in philosophy.

Dr. Overvold.

161b. THEORY OF VALUE. Not offered, 1973-74.

Definitions of "value"; psychological and social conditions of different values; function of value judgments; nature of standards and their role in criticism — in art, science, morals. Foundations of the normative disciplines, i.e., logic, ethics, esthetics. Prerequisite: two semester courses in philosophy including a course in one of the following areas: logic, ethics or esthetics.

Dr. Anderson.

17a. PHILOSOPHY OF SCIENCE I.

An introduction to certain problems of epistemology and netaphysics, cast into the terms and context of 20th-century science. The questionable "ontological status" of theories is he principal point of focus. Prerequisite: semester course in hilosophy.

Dr. Hollinger.

17b. PHILOSOPHY OF SCIENCE II. Not offered, 1973-74.

more advanced treatment of selected problems in scientific xplanation. One such problem is that of "artificial inteligence" in machines. Does the traditional problem of mind nd body become any less onerous when viewed within the leveloping context of Cybernetics and information theory? ome symbolic logic is required. Prerequisite: two semester ourses in *both* philosophy and a natural science. hilosophy 17 is recommended.

Dr. Hollinger.

172b. PHILOSOPHY OF SOCIAL SCIENCE.

dialectical examination of naturalistic and phenomnological approaches to social reality. Social science, atural science and methodology. Behaviorism, consciousess, functionalism, cultural relativism and determinism, ationality, values, reductionism and holism. Psychology and ociology.

Dr. Hollinger.

8a. HISTORY OF AMERICAN PHILOSOPHY.

urvey of important philosophical ideas in America with mphasis on their relationship to American experience. Preequisite: one semester course in philosophy.

Dr. Beck.

18b. SYMBOLIC LOGIC.

Advanced work in symbolic logic, with stress on principles of deductive rigor. Some consideration of philosophical implications of logic. Topics to be discussed include: sentential calculus, predicate calculus, Tarski's definition of truth, selected metatheorems, and Henkin's completeness proof for the first order predicate calculus. Prerequisite: permission of instructor.

Dr. Wright.

113a. PHILOSOPHY OF LANGUAGE.

An examination of the concepts of reference, truth, meaning, translation, rationality, objectivity, linguistic relativism and determinism, intentionality, and linguistic universals, in light of traditional philosophical problems about the relations between language and reality.

Dr. Hollinger.

19a. EPISTEMOLOGY.

Survey of the major topics in theory of knowledge, including study of significant alternative positions. Prerequisite: two semester courses in philosophy.

Dr. Overvold, Dr. Hollinger.

19b. EXISTENTIALISM.

A study of the major philosophers in twentieth-century Existentialism with a focus on their redefinition of man in terms of his "lived world" and his nonrational capacities. Prerequisite: two semester courses in philosophy.

Dr. Overvold.

201-4. SEMINARS IN PHILOSOPHY.

Advanced studies of topics of central importance to philosophy, such as the philosophy of Whitehead, Spinoza, Plato, Hegel, the nature of the *a priori*, the problem of justice, the nature of truth, phenomenology, the philosophy of mind, the philosophy of law. Offerings vary each semester. Prerequisite: four semester courses in philosophy or permission of instructor.

Staff.

201a. PHENOMENOLOGY.

Fall Semester, 1973-74. Dr. Overvold.

202a. PHILOSOPHY OF MIND.

Fall Semester, 1973-74.	Dr. Hollinger.

203a. MEDIA STUDIES.

Fall Semester, 1973-74.	Dr. Markle.

201b. PLATO.

Spring Semester, 1973-74.	Dr. Anderson.

202b. PHILOSOPHY OF LAW.

Spring Semester, 1973-74.	Dr. Beck.

Education 290b. PHILOSOPHY OF EDUCATION.

Description offered in the department statement under Education.

Dr. Beck.

RESEARCH IN PHILOSOPHY

99. ADVANCED TOPICS IN PHILOSOPHY.

Group discussion, individual tutorials and independent research in areas of philosophy. The independent research involves a topic of the student's choice within the designated area. Prerequisite: where appropriate, completion of regular department course in the area; two semester courses in philosophy; and instructor's permission. Offerings vary each semester.

Staff.

Fall Semester, 1973-74

Greek Philosophy	Dr. Anderson.
Epistemology	Dr. Overvold.
Philosophy of Science	Dr. Hollinger.

Spring Semester, 1973-74

Logic	Dr. Wright.
Phenomenology	Dr. Overvold.
Esthetics	Dr. Anderson.
Social Philosophy	Dr. Beck.
Philosophy of Mind	Dr. Hollinger.

204. SURSEMINAR: TEACHING IN PHILOSOPHY.

Not offered, 1973-74.

Prerequisite: permission of instructor.

PHYSICS

DEPARTMENT FACULTY

John A. Davies, Ph.D., Associate Professor of Physics, Department Chairman
Roy S. Anderson, Ph.D., Professor of Physics
Michael McClintock, Ph.D., Visiting Professor of Physics
Harvey A. Gould, Ph.D., Associate Professor of Physics
Christoph Hohenemser, Ph.D., Associate Professor of Physics*
Roger P. Kohin, Ph.D., Associate Professor of Physics
Joseph P. McEvoy, Ph.D., Associate Professor of Physics*
Albert M. Gottlieb, Ph.D., Assistant Professor of Physics
Thomas Bergstresser, Ph.D., Visiting Assistant Professor of Physics

Affiliated Faculty
Jerald A. Weiss, Ph.D., Affiliate Professor of Physics
Raymond Goloskie, Ph.D., Affiliate Associate Professor of Physics
Thomas H. Keil, Ph.D., Affiliate Associate Professor of Physics

*On leave of absence, 1973-74

The Department of Physics provides undergraduate and graduate courses which can be combined to meet a variety of student interests and needs. Formal classes (excluding readings and special topics) fall into six classes, as given below.

TYPES OF COURSES OFFERED

(1) Courses for the non-scientist. These require high school algebra and geometry. They are designed to acquaint the student with the nature of scientific inquiry and to inform the student of the impact of science in the contemporary world. Included in this class are 1b and 2b.

(2) Core undergraduate courses. This is a sequence of three one year courses emphasizing phenomena of physics. The first year requires no calculus, and the second and third year are taught at the level of elementary calculus. The core curriculum is designed to meet the needs of General Physics

majors and Technology and Man majors. Included in the sequence are Physics 11, 111, and 161.

(3) Core-tutorials. A sequence of three undergraduate courses that parallels the core courses in subject matter, but is specifically intended for pre-professional science majors. Students attend the lectures of the core courses, but a substantial part of the work is conducted in weekly tutorials. In these, the subject matter is explored in greater depth and more rigor than the lectures. Students must be prepared to work independently.

(4) Laboratories. A sequence of five semesters of laboratory designed to meet the needs of all types of students. Included are Physics 19, 119a, b, and 219b. Laboratory work beyond these courses may be taken in the form of research participation as Physics 231 or 232.

(5) Advanced undergraduate courses. Courses beyond the three year core-sequence that are at the beginning graduate level. They are designed for undergraduate science students, particularly physics majors, who intend to enter graduate school. Included are Physics 201, 205, and 209a.

(6) Graduate courses. Graduate courses fall into two classes, basic and advanced. The basic graduate courses, required for the Ph.D. are Physics 301, 305, 309a, and 310. Advanced courses include Physics 311, 312, 313, 314, and 320. Most graduate courses are given in alternate years.

UNDERGRADUATE MAJOR OPTIONS

A. General Physics

This is a major intended for students who wish to study physics solely as a liberal art, and who do not intend to enter graduate school. It allows maximum opportunity for electives in other fields. It is suitable as a preparation for teaching, business, and a variety of professional schools. The requirements for this major are Physics 11, 19, 111, 161, Mathematics 13, and 12 semester hours of electives from science, mathematics, and computer science. A student may replace a required course with an appropriate more advanced course with the approval of the Department Undergraduate Advisor.

B. Technology and Man - Physics Option

This is a major intended for students who are interested in careers that deal with the interface between science and society. Details of the program are given elsewhere in this catalog, under the title Technology and Man. Students choosing the Physics option under the program are advised to select Physics 11, 19, 111, and 161.

C. Physics

This is a standard, pre-professional program intended for those who plan graduate study in physics or an allied science. The program requirements are 8 semester courses in Physics beyond Physics 12 and 19 (normally including 112, 162, and 119a,b). Also required are Mathematics 13 and one year of mathematics beyond 13. In addition, the student is urged to take one year of chemistry and one additional year of mathematics at an advanced level. With permission of the Department Undergraduate Advisor, a first year student with a sound background in physics may be admitted to Physics 111 or 112. This procedure will permit completion of the requirements for the major by the end of the junior year, and leaves the senior year open for independent study and/or honors.

UNDERGRADUATE HONORS

A qualified undergraduate in any of the major options above is encouraged to participate in the Physics Honors Program. During the junior and senior year, the Honors student conducts an experimental or theoretical research project under the guidance of a faculty member. This work is submitted to the Department as an Honors Thesis. Recommendation for a degree with Honors in Physics is determined by the quality of the thesis, and the performance of the student in an oral defense of his thesis. An Honors candidate must maintain an average of B- in physics, chemistry, and mathematics courses.

GRADUATE PROGRAM

The Department of Physics offers the M.A. and Ph.D. degrees in Physics, and jointly with the Department of Chemistry, a Ph.D. in Chemical Physics. Departmental research is concentrated in the experimental and theoretical study of condensed matter with emphasis on phase transitions.

At entrance, graduate students are given a placement examination which tests their knowledge of undergraduate physics. A student failing this examination may be required to take a remedial program before entering fully on the graduate program, and may be asked to fulfill the requirements of the M.A. degree before proceeding to the Ph.D.

To receive the Ph.D. the student must satisfy the University residence and course requirements, pass with B or better the basic graduate courses Physics 301, 305, 309a, and 310, and three semesters of Physics 303. To qualify for Ph.D. research, the student must pass four oral examinations in the subject matter of the basic graduate courses, and an additional comprehensive oral examination. The student must also pass at least a semester graduate course in a subject other than physics, demonstrate literacy in a foreign language and computer programming, and complete a dissertation based on an original piece of research. Students entering with advanced standing and transferable credit are encouraged to demonstrate their proficiency in core graduate courses through examination.

To receive the M.A. the student must satisfy the University residence and course requirements, pass four semesters of the basic graduate courses, Physics 301, 305, 309a and 310 and one semester of Physics 303, and pass two related oral examinations. He must also complete a thesis based on an original piece of research.

Those interested in further information on research opportunities in the Department should request the brochure "The Graduate Program and Research in Physics at Clark." Those desiring more detail on graduate requirements and their timing should request a copy of "The Physics Graduate Student Handbook." Both are available from the Chairman of the Department.

Applicants for admission should know that various forms of financial aid are available, and that the Department considers provision of such aid an important responsibility. Application forms for admission and financial aid may be requested from the Chairman of the Physics Department.

COURSES

1a. EXPLORING THE UNIVERSE.

A one semester introduction to astronomy for the non-scientist. For details, see listing under ASTRONOMY.

Dr. Anderson.

1b. PHYSICS FOR ARTISTS, POETS, AND PHILOSOPHERS.

A one semester introduction to the history, methodology and achievements of physics with an appreciation of its social and cultural influences. The course will stress modern ideas of space and time, Einstein's theory of relativity, current theories of cosmology, and quantum theory. Mathematical tools necessary are high school algebra and geometry. Three class meetings and one laboratory per week. Open to freshmen.

Dr. Gould.

2b. THE PHYSICS OF EVERYDAY EXPERIENCE.

A one semester introduction to the basic physical concepts necessary for a fundamental understanding of our everyday observations of the physical world, and the nature of discovering, reasoning, and concept-formation in the physical sciences. Topics will include the physics of hearing and seeing, matter in motion, heat, electricity and magnetism, the nature of matter, and a study of man's place in the physical universe. The course is directed towards the non-scientifically oriented student. Although recent advances in science and technology will be discussed, the emphasis in Physics 2b is a fundamental understanding of everyday experience in contrast to Physics 1b in which the emphasis is on developments in physics in the 20th century. Three lectures per week plus an open, informal laboratory.

Staff.

11. INTRODUCTORY PHYSICS.

A non-traditional, introductory course designed for students majoring in science. Stresses simplicity and self-consistency of physical models and mathematical laws in explaining a variety of phenomena. Topics will include statistical physics, relativity and quantum physics in addition to mechanics, electricity and magnetism. Although calculus is not a prerequisite, Physics 11 is a rigorous and challenging preparation for advanced courses in the sciences. Together with Physics 19 Laboratory (see below) it satisfies the requirements for majors in General Physics, Biology, Chemistry, and Technology and Man. Three 50-minute lectures per week plus a discussion once a week.

Dr. Anderson.

12. INTRODUCTORY PHYSICS.

An introductory course for science majors and others who desire a more mathematically complete approach than given in Physics 11. The subject matter and general lectures are the same as in Physics 11. A substantial part of the work will be conducted in tutorials, in which the mathematical basis of the lectures is explored. The student should be prepared to work independently. Three lectures and one tutorial per week. Co-requisite: Mathematics 12.

Dr. Gould.

19. INTRODUCTORY LABORATORY.

A laboratory course designed to accompany Physics 11. Emphasis on physical measurements, techniques, and the ideas of applied mathematics needed to interpret them. One meeting per week. Co-requisite: Physics 11 or 12.
One-half course value. Dr. Kohin.

111. INTERMEDIATE PHYSICS.

A second course in physics, designed to follow Physics 11. It is intended for the general student interested in the concepts, methods, and applications of physics, and satisfies the requirements of the Program on Technology and Man. The course presumes mathematics at the level of elementary calculus, and will develop other mathematical tools as needed. Topics covered are electricity and magnetism, wave and optical phenomena, thermodynamics, and kinetic theory. Applications to man-technology problems. Open to freshmen with consent of the Department Undergraduate Advisor. Co-requisite: Mathematics 12.

Dr. Kohin.

112. INTERMEDIATE PHYSICS.

A second course in physics for science majors, designed to follow Physics 12. The subject matter and general lectures are the same as Physics 111. Over half of the work is conducted in relation to tutorials in which the subject matter is explored in greater depth. The student should be prepared to work independently. Co-requisite: Mathematics 13; Pre-requisite: Physics 12 or permission of the Department Undergraduate Advisor.

Dr. Kohin.

119a. ELECTRONICS LABORATORY.

An introductory laboratory course in electronics, the goal of which is to build and understand several simple circuits using discrete as well as integrated solid state elements. The course will begin with fundamentals of AC and DC circuit theory, and the use of basic test instruments such as oscilloscopes. Special emphasis will be given to logic circuitry and operational amplifier techniques. The course may replace Physics 19 as an introductory laboratory for those who are qualified. Two laboratories per week. Open to freshmen with consent of instructor.

Dr. Gottlieb.

119b. PHYSICAL INSTRUMENTATION LABORATORY.

An introduction to modern physical research instrumentation. The course will involve each student in one or more projects. The student will be expected to design, build, and assemble the experimental apparatus, using his background in electronics. Departmental facilities such as the machine shop and the electronics stockroom will be available. The course will emphasize measurements on fundamental particles, such as protons, muons, gamma rays, electrons, and positrons. One lecture and two laboratory periods per week. Pre-requisite: Physics 119a or equivalent.

Dr. Anderson & Dr. Gottlieb.

161. ATOMIC AND NUCLEAR PHYSICS.

A third course in physics, designed to follow Physics 111. It is intended for the general student who wishes to learn in detail about the structure of atoms and nuclei. To achieve its goal, the course will include an introduction to quantum mechanics. The course presumes mathematics at the level of elementary calculus, and will develop other mathematical tools as needed. Applications to the problems of energy technology and environmental radiation will be given. Pre-requisite: Physics 111, Mathematics 12.

Dr. Bergstresser & Dr. Gottlieb.

162. ATOMIC AND NUCLEAR PHYSICS.

A third course in physics for science majors, designed to follow Physics 112. The subject matter and general lectures are the same as Physics 161. Over half of the work will be conducted in relation to tutorials in which the subject matter will be explored in greater depth. The student should be prepared to work independently. Pre-requisite: Physics 112, Mathematics 13.

Dr. Bergstresser & Dr. Gottlieb.

188. INDEPENDENT PROJECTS.

Variable course credit. Staff.

201a. CLASSICAL THEORY OF FIELDS.

A course designed to prepare the physics major for graduate work in physics. Lectures are the same as in Physics 301, but evaluation is separate. Pre-requisite: Physics 112, 162.
One and one-half course value. Dr. Davies.

205. QUANTUM MECHANICS.

A course designed to prepare the physics major for graduate work in physics. Lectures are the same as in Physics 305, but evaluation is separate. Pre-requisite: Physics 112, 162.
Dr. Weiss.

209a. STATISTICAL MECHANICS.

A course designed to prepare the physics major for graduate work in physics. Lectures are the same as in Physics 309a, but evaluation is separate. Pre-requisite: Physics 112, 162.
Dr. Bergstresser.

219b. PHYSICAL INSTRUMENTATION LABORATORY.

An introduction to modern physical research instrumentation. The course is the same as Physics 119b, except that interpretation of experiments must be at the advanced undergraduate or beginning graduate level. Undergraduates who have completed Physics 119b may register for 219b.
Dr. Anderson & Dr. Gottlieb.

230. DIRECTED READINGS IN PHYSICS.

Directed readings in physics to provide the special needs not covered in regular courses.
Variable course credit. Staff.

231. SPECIAL PROJECTS IN EXPERIMENTAL PHYSICS.

Independent laboratory projects done under the guidance of a faculty advisor.
Variable course credit. Staff.

232. SPECIAL PROJECTS IN THEORETICAL PHYSICS.

Independent projects in theoretical physics done under the guidance of a faculty advisor.
Variable course credit. Staff.

301a. CLASSICAL THEORY OF FIELDS.

An integrated year course in classical mechanics and electrodynamics. Topics covered include variational principles, canonical transformations, Hamilton-Jacobi theory, special theory of relativity, Lorentz transformations and the Lorentz group, the stress tensor and continuous media, Maxwell's equations, electromagnetic potentials, boundary value problems, radiation theory, and self-interactions.
One and one-half course value. Dr. Davies.

303. RESEARCH APPRENTICESHIP.

Direct participation in each of the experimental and theoretical research groups of the department. The student spends approximately one half semester in each research group. Ph.D. students should enroll in this course for three semesters, M.A. students for one semester.
Staff.

305. QUANTUM MECHANICS.

A comprehensive introduction to non-relativistic quantum mechanics. Topics include the superposition principle, linear vector spaces, the Schrodinger and Heisenberg pictures, symmetries, angular momentum, scattering theory, perturbation theory. Applications to atomic, nuclear, and solid state physics.
Dr. Weiss.

309a. STATISTICAL MECHANICS.

A one semester course in thermodynamics, statistical mechanics and kinetic theory at an advanced level. Topics covered include ensemble theory, density matrix, ideal gases, Fermi and Bose distributions, Debye theory, nonideal gases, molecular field theory, Boltzmann equation, Onsager relations.
Dr. Bergstresser.

310a. SOLID STATE PHYSICS. Not offered, 1973-74.

A one semester introduction to the quantum theory of solids. Topics covered include Born-Oppenheimer approximation, lattice dynamics, phonon spectra, electron structure of metals, insulators, and semi-conductors, transport theory.
Dr. Hohenemser.

311. ADVANCED QUANTUM MECHANICS.

A one semester course including relativistic quantum mechanics, quantum electrodynamics, and the many body problem. Pre-requisite: Physics 305 or equivalent.

Dr. Goloskie.

312. APPLICATION OF GROUP THEORY TO PHYSICS.

Not offered, 1973-74.

Representation theory for finite groups. Applications to crystallographic point groups. Representations of continuous impact groups; the rotation group. The Wigner-Eckart theorem and selection rules. The permutation group and its application to a system of identical particles. Classification of states of a multi-electron atom.

Dr. Davies.

313. LOW TEMPERATURE PHYSICS

Not offered, 1973-74.

Phenomonological and microscopic theories of liquid helium - three and four, and type I and type II superconductivity. Experimental techniques at low temperature.

Dr. McEvoy.

314. THEORY OF MANY PARTICLE SYSTEMS.

Not offered, 1973-74.

The equilibrium and transport properties of many body systems are studied at zero and non-zero temperatures using the formalism of thermodynamic Green's functions. Applications are made to the electron gas, the degenerate Bose and Fermi gas, and superconductivity.

Dr. Gould.

315. CRITICAL PHENOMENA.

Not offered, 1973-74.

Landau theory of second order phase transitions. Ornstein-Zernicke theory, and calculation of critical exponents. Review of recent experimental work — near magnetic, gas-liquid, ferroelectric, superconducting and structural phase transitions.

Dr. Gould.

320. ADVANCED SOLID STATE PHYSICS.

An advanced course in solid state physics emphasizing many body techniques.

Dr. Bergstresser.

325. RESEARCH SEMINAR.

A student participation seminar in current research problems.

One-quarter course value. Staff.

330. TOPICS IN EXPERIMENTAL PHYSICS.

A specific topic in experimental physics is considered at the research level. Topics are selected on the basis of current interest.

Variable course credit. Staff.

335. TOPICS IN THEORETICAL PHYSICS.

A specific topic in theoretical physics is considered at the research level. Topics are selected on the basis of current interest.

Variable course credit. Staff.

340. COLLOQUIUM.

Weekly invited lectures on research topics of current interest.

No credit. Staff.

350. RESEARCH.

Variable course credit. Staff.

ASTRONOMY

A single introductory course is available at the introductory level. More advanced courses related to astronomy are listed under courses in Physics.

1a. EXPLORING THE UNIVERSE.

A one-semester introduction specifically designed for the non-science student who wishes to know what science is about, but who does not wish to master the detail found in the typical introductory science survey course. Astronomy is an interdisciplinary field involving physics, mathematics, chemistry, geology, and even philosophy. The purpose of this introduction to astronomy is to convey how scientific ideas are developed through the application of experimental knowledge. The use of mathematics is minimized; when mathematics is employed, it is at the level of high school algebra. Approximately the first half of the semester is devoted to consideration of the solar system. The second half of the semester concerns the stars and their life cycles, star clusters, and galaxies. Theories of the origins of the solar system, of the Universe, and of life are discussed. Observing sessions include use of telescopes in the University Observatory. Several experiments are performed on the basis of astronomical observations. There are field trips to nearby observatories and planetariums.

Dr. R. Anderson.

PSYCHOLOGY

DEPARTMENT FACULTY

Seymour Wapner, Ph.D., G. Stanley Hall Professor of Genetic Psychology, Department Chairman
Robert W. Baker, Ph.D., Professor of Psychology
Roger Bibace, Ph.D., Professor of Psychology
Tamara Dembo, Ph.D., Professor of Psychology, Emeritus
Bernard Kaplan, Ph.D., Professor of Psychology
Donald G. Stein, Ph.D., Professor of Psychology
Ina G. Uzgiris, Ph.D., Professor of Psychology
Morton Wiener, Ph.D., Professor of Psychology
Leonard E. Cirillo, Ph.D., Associate Professor of Psychology
Joseph H. deRivera, Ph.D., Associate Professor of Psychology
Rachel Falmagne, Ph.D., Associate Professor of Psychology
James D. Laird, Ph.D., Associate Professor of Psychology
David A. Stevens, Ph.D., Associate Professor of Psychology
Nicholas S. Thompson, Ph.D., Associate Professor of Pyschology and Adjunct Associate Professor of Biology
William Damon, Ph.D., Assistant Professor of Psychology
Neil O. Rankin, Ph.D., Assistant Professor of Psychology
John Whiteside, Ph.D., Assistant Professor of Psychology

Adjunct Faculty
Edward E. Sampson, Ph.D., Professor of Sociology and Adjunct Professor of Psychology
David Zern, Ph.D., Associate Professor of Education and Adjunct in Psychology

Affiliated Staff
Harold Goodglass, Ph.D., Affiliate Professor of Psychology
Donald M. Broverman, Ph.D., Affiliate Professor of Psychology
William Vogel, Ph.D., Affiliate Professor of Psychology
Jacques Voneche, Ph.D., Affiliate Professor of Psychology
Robert A. Ciottone, Ph.D., Affiliate Assistant Professor of Psychology
Martin L. Albert, Ph.D., Visiting Lecturer of Psychology
D. Frank Benson, M.D., Visiting Lecturer of Psychology
Marlene Oscar-Berman, Ph.D., Visiting Lecturer of Psychology
Nelson M. Butters, Ph.D., Visiting Lecturer of Psychology
Laird S. Cermak, Ph.D., Visiting Lecturer of Psychology
George E. Gardner, M.D., Ph.D., Visiting Lecturer of Psychology
Davis H. Howes, Ph.D., Visiting Lecturer of Psychology
Edith F. Kaplan, Ph.D., Visiting Lecturer of Psychology
David J. Meyerson, M.D., Visiting Lecturer of Psychology
Lawrence Peterson, Ph.D., Visiting Lecturer of Psychology
Jeffrey Rosen, Ph.D., Visiting Lecturer of Psychology
Malcolm Sills, M.D., Visiting Lecturer of Psychology
Edgar B. Zurif, Ph.D., Visiting Lecturer of Psychology
Ward J. Cromer, Ph.D., Affiliate Research Associate of Psychology
Shannon T. Devoe, Ph.D., Affiliate Research Affiliate of Psychology

UNDERGRADUATE PROGRAM

The following revised requirement for the major in psychology are effective for students declaring their major 1 September 1973 or thereafter.

Psychology 101 is a prerequisite for all other psychology courses except Psychology 102 and 103.

The BA major program in psychology is designed to provide each student with a firm grounding in the perspectives and methodologies of psychology; as well as to provide both guidance and ample opportunity for meaningful study among the various specialties of psychology. The requirements for the major are the successful completion of at least 12 courses, of which at least 8 courses are to be take in the psychology department, and at least 4 courses in related fields. The courses must form a coherent, intelligible pattern in the sense of a concentration. Specifically, the major consists of a core program of four courses (equivalent to 16 credits) and an individual concentration of at least eigh courses (equivalent to 32 credits). Completion of the core program entails taking Psychology 101, either 160 or 230, an two of the following practicum courses: 200 through 219. The purpose of the two practicum requirement is to guarantee each student some contact with a variety of methodologies employed by psychologists.

Individual concentrations have been developed to insure that a psychology major will derive the maximum benefit from his contact with the Clark psychology department and other departments related to that concentration. The indicated concentrations are of two types: general concentrations in fields of psychology, and more specialized concentrations in areas of particular strength of the department.

The focus and domains of the concentration options may be gathered from the following list of concentration areas: Advanced General Psychology; Social-Personality; Personality-Abnormal; Developmental Psychology; Child Growth and Development; Psychobiology; Physiological Psychology; Ethology; Psychology of Language; Perception.

Complete specification of courses within these concentrations may be secured from the Department Secretary.

If a student wishes to develop a concentration other than those presented above, he should do so in consultation with an advisor. The proposed concentration must then be submitted to the chairman for approval by the department.

If a student wishes to undertake an inter-disciplinary major focussing on a systematic body of knowledge that includes psychology as one component, he must follow the procedures for student designed majors as outlined in the present catalog.

The Honors Program. Honors work in Psychology is available to seniors who have demonstrated high scholastic achievement and the ability to work independently in scholarly situations. Students may seek admission to the Honors Program by requesting the faculty member, under whose direction they intend to do research work, to submit their name to the full faculty for consideration. Students in the Honors Program carry out an independent empirical research project under the sponsorship of one or more faculty members. This research provides the basis for a thesis which upon completion is presented and defended by the student before an Examining Committee of faculty members. On the basis of the report of the Examining Committee and the student's advisor for the project, the Department may recommend to the College Board that the student be awarded Departmental Honors at one of the following levels: Highest Honors, High Honors, or Honors in Psychology.

Students preparing for graduate work should also obtain a reading knowledge of French, German or Russian.

GRADUATE PROGRAM

The department admits to graduate work only those students who plan to enroll in the Ph.D. program on a full-time basis. A Master of Arts degree, based on an experimental thesis, ordinarily completed within the first two years of graduate work, is a requirement for admission to candidacy for the Ph.D. degree. In addition, there is the requirement that every graduate student participate in the Teaching Apprenticeship Program of the department. Credit hours are not ordinarily assigned to graduate courses.

Master of Arts: The customary program consists of five-year (ten-semester) courses — including experimental methods in psychology (301a), statistical methods (302) and seven additional semester courses — supplemented by the writing of a thesis in the area of special interest.

Doctor of Philosophy: The student is required to pass with distinction five courses during the first year of graduate study and a minimum of four courses during the second year. The departmental language requirement must be met by a knowledge of French, German or Russian. He is required, normally at the end of the second year, through written papers and oral examination, to demonstrate his competence in psychology, including an area of specialization. In addition, the student is required to demonstrate his ability to conduct independent research as evidenced by the presentation of an acceptable dissertation. Research for the dissertation should normally be completed during the fourth year at the University; however, the length of the program will vary depending upon individual circumstances. At a final oral examination a student is required to defend his dissertation and to show his competence in a general field of psychology and in his area of specialization.

The overall aim of the graduate program is to provide the student with a general, integrated background covering the various areas of psychology. Within this emphasis there are several specialized programs available and these are described briefly below.

Clinical Psychology Program. The department offers a five-year A.P.A.-approved program in clinical psychology leading to the degree of Doctor of Philosophy. Beyond the standards of proficiency in the general field of psychology expected of all students, the student in the Clinical Program will be required to demonstrate special mastery in the understanding of concepts in the clinical area and in the use of clinical methods. One year of internship is included in this five-year program. Provision is made for a wide variety of practical experiences in cooperating institutions, clinics and agencies. There are over 20 institutions and agencies in Worcester, Boston, Providence and surrounding areas which cooperate in providing such practicum and research facilities. In addition to the one-year internship, all students in the Clinical Program obtain a variety of practicum experiences in the Clark University Psychological Services Center throughout their enrollment in the graduate program. For further information, write to the director of the program: Dr. Morton Wiener.

There is a Psychological Services Center on campus which is operated as part of the doctoral training program in Clinical Psychology and which offers some psychological services to students who wish to help in academic or personal adjustment. Such services are limited and, where necessary, students will be referred to other appropriate University or community resources.

Post-doctoral training in clinical psychology is available. It aims to provide opportunities for clinical psychologists to develop further their research and clinical skills. Facilities of the Department and other agencies are utilized.

Developmental Psychology Program. This program is designed to train students in the comparative and experimental analysis of behavioral development. It emphasizes not only the study of human development over a wide age range, but also stresses the application of developmental principles, concepts and methods to problems of general psychology, psychopathology, social psychology, etc. For further information, write to the director of the program: Dr. Bernard Kaplan.

The Experimental Psychology Program. Training in experimental psychology is available in a variety of areas, including perception, human learning and cognition, physiological, comparative animal behavior and ethology. While students often specialize in one area, they are encouraged to develop competence in several areas. Students interested in neuropsychology, psychopharmacology, electrophysiology, and neurochemistry have been able to utilize for research and training not only our own extensive laboratories, but also other specialized facilities in such institutions as Worcester State Hospital, Boston Veterans Administration Hospital, and several non-profit research laboratories in the area. Since our experimental programs are rather broad, those interested in more information should write to the Department Chairman, Dr. Seymour Wapner.

Rehabilitation Research Training Program. In conjunction with all other areas of specialization, rehabilitation research training is available. This training is designed to prepare students for investigation of psychological problems as they occur in everyday life. Emphasis on development of novel techniques and concepts is the main feature of the training. An integral part of the program is an apprenticeship practicum during which the various phases of research in real-life settings are examined under the guidance of a staff member. This program is especially pertinent to those who are interested in social-emotional and value problems of handicapped and non-handicapped people. For further information, write to the director of the program: Dr. Tamara Dembo.

Social Psychology Program. This program aims to develop an understanding of social behavior and person development. This goal is furthered by a number of different approaches (ranging from ethological to phenomenological) applied to problems such as the development of self-knowledge, interpersonal-relations, and group dynamics. Fo further information write to the director of the program, Dr. Joseph deRivera.

Interdisciplinary Work. The Department recognizes the interest of some students to undertake study and research which cuts across disciplines or areas that now exist. Interdisciplinary activity by students is feasible at Clark inasmuch as some members of the Psychology faculty are now, or recently have been, engaged in activities with faculty of other departments.

THE HEINZ WERNER INSTITUTE OF DEVELOPMENTAL PSYCHOLOGY

Associated with the Department is the Heinz Werner Institute of Developmental Psychology, which has three aims: first, to integrate various research programs dealing with developmental problems; second, to bring to Clark University scholars, teachers, and research workers from disciplines for which developmental problems are pertinent such as anthropology, biology, and certain areas of medicine; third, to train research workers on post-doctoral levels in the comparative-development approach to behavior.

Information regarding post-doctoral work at the Institute may be obtained by writing to Dr. Bernard Kaplan.

Applicants for graduate study in psychology, who are nterested in securing more detailed information concerning the Department and its programs, are urged to write to the Department for two brochures: "Information for Graduate Students" and "A Statement Concerning Educational Philosophy and Atmosphere."

COURSES

101a,b. GENERAL PSYCHOLOGY.

Introduction to the principles of human behavior.

TBA.

102a,b. PSYCHOANALYTIC INTERPRETATION OF BEHAVIOR.

Psychoanalytic contributions to the understanding of human behavior and conflicts.

Dr. Bibace.

103. HUMANISTIC PSYCHOLOGY.

Not offered, 1973-74.

A survey of various humanistic approaches to understanding human behavior, including those of Maslow, Rogers, the Existential Psychologists, Laing, and Jourard. The focus will be on understanding the sources of such theorizing, the merits of such approaches relative to other theoretical approaches, and on the relationships of humanistic perspectives to related phenomena such as sensitivity training, Eastern "psychological" religions, etc. A number of psychology department staff and graduate students as well as people from outside the department and the University will take part.

To be announced.

120b. INTRODUCTION TO HUMAN LEARNING AND COGNITION.

Introduction to the major theories, basic concepts and principal phenomena in the areas of learning, memory, problem solving, and language. The course is aimed at providing a (simplified) formulation of the central questions and issues in these areas, an introduction to the experimental method for studying them, and an overview of the major findings.

Dr. Falmagne.

130a. PSYCHOLOGY OF LEARNING.

Methods and findings in the study of learning are discussed, with emphasis on their relation to theories of learning. Selected controversial issues are examined.

Dr. Stevens.

140a. SENSATION AND PERCEPTION.

An introductory course dealing with basic concepts of sensory physiology and sensory processes together with a discussion of the relation between perceptual and cognitive processes. All major senses will be treated.

Dr. Whiteside.

150a,b. INTRODUCTION TO CHILD PSYCHOLOGY.

The normal development of the child from infancy to adolescence will be discussed, with particular emphasis on the interactions between changes in cognitive and changes in perceptual, linguistic, as well as interpersonal functioning. Theoretical approaches to conceptualizing change in the developing child will be emphasized.

a. Dr. Damon; b. Dr. Uzgiris.

160b. QUANTITATIVE METHODS.

Introduction to basic techniques of descriptive and inferential statistics. Primarily for sophomores with a good background in algebra, and prospective majors intending to spend the junior year away from Clark.

Staff.

170a. INTRODUCTION TO SOCIAL PSYCHOLOGY.

An examination of the relationship between the individual and the social system as understood through the theories, methods, findings, and applications of social psychology.

Staff.

172a,b. PSYCHOLOGY OF PERSONALITY.

Consideration of various theoretical approaches, including psychoanalytic, behaviorist and self theories, and of research work in areas such as anxiety, stress, unconscious processes, emotion and motivation.

A. Dr. Laird; b. Dr. Cirillo.

173a,b. ABNORMAL PERSONALITY.

Examination of the issues involved in the definition, description, and explanation of deviant behavior. Prerequisite: 172a,b.

a. Dr. Finkel; b. Dr. Baker.

175b. NORMAL AND PATHOLOGICAL THOUGHT PROCESSES.

An examination of the experimental and theoretical literature dealing with the contrast and similarities between normal and pathological thinking. Will study such issues as perception, imagination, concept formation, language and information processing as displayed in normals and in people in various categories of psychopathology. Prerequisite: Psych. 172 and 103.

TBA.

184b. PHENOMENOLOGY OF PERSONAL ACTION.

In this course we will consider behavior to be an independent rather than a dependent variable, examining the implications of concepts such as: assertion, commitment, identification, liberation, etc. The first hour of each class session is a lecture devoted to the analysis of a concept. In the second hour, we will divide into small groups which will use Cohn's "theme centered" method to confront the conceptual analysis with data from our personal experience.

Dr. deRivera.

200b. LABORATORY IN ETHOLOGY.

An introduction to observational techniques in the study of human and animal subjects. Permission; Limited to 12.

Mr. Thompson.

201a,b. LABORATORY IN SOCIAL PSYCHOLOGY.

Focuses on the behavior of small groups. Participation in this laboratory includes chairing one of the discussion groups in Psychology 184b.

a. To be announced.

203a. LABORATORY IN HUMAN LEARNING AND COGNITION.

Experimental studies in the area of concept learning, memory, reasoning; and logic and language development. Examination of related methodological questions involving conception and design of experiments, data analysis and interpretation and theory testing, as well as survey of background material directly relevant to the studies. Prerequisites: 160b or 260. Permission of instructor required.

Dr. Falmagne.

204b. LABORATORY IN LEARNING.

The course is designed to familiarize students with research methods and experimental designs used in investigations of theories of learning and learning phenomena, with both human and animal subjects. Prerequisite: Psychology 130a and either Psychology 160b or 260a.

Dr. Stevens.

205a. LABORATORY IN THINKING.

Empirical studies of selected problems in such areas as concept formation, problem solving, and psycholinguistics. Related theoretical and methodological issues considered in their historical context. Prerequisite: Psychology 160b or 260a.

Dr. Cirillo.

206a,b. LABORATORY IN PERSONALITY.

Focus on issues and problems in psychological research in general and in the personality area in particular, the problems being exemplified in studies developed and performed by the class group and by individuals. Experiments may be in any of the conventional areas of personality research, such areas as perceptual defense, motives and performance, self perception, experimenter influence and emotions. Prerequisite: Psychology 160b and 172a, or their equivalents.

Dr. Broverman.

207b. LABORATORY IN PERCEPTION.

The laboratory course in perception will include investigation of sensory and perceptual phenomena in a variety of sense modalities. Theoretical and methodological issues will be considered in the context of specific experimentation. Prerequisite: Psychology 160b or 260a.

Dr. Whiteside.

208a. LABORATORY IN CHILD PSYCHOLOGY.

Introduction to research methods employed in the study of child behavior through participation in studies carried out by the class, with particular emphasis on experimental designs currently used in the field. Related theoretical and methodological issues will be discussed with the aim of placing the experimental study of child behavior within the study of development. Prerequisites: 160b or 230a; 150a or 150b.

Dr. Uzgiris.

209b. LABORATORY IN PHYSIOLOGICAL PSYCHOLOGY.

ntroduction to methods, techniques, and experiments used to study the physiological bases of behavior. Students also participate in debates of interest to the group. Prerequisite: Psychology 222a or consent of the instructor.

Dr. Stein.

210b. LABORATORY IN PHENOMENOLOGY.

This laboratory is designed to acquaint students with the method of "conceptual confrontation" — a type of phenomenology that is useful in exploring affects and interpersonal phenomena. Participation in the laboratory includes chairing one of the discussion groups in Psych. 184, Phenomenological Psychology. Prerequisite: Psych. 184b.

Dr. deRivera.

212a. RESEARCH IN SPATIAL PERCEPTION.

Direction of individual students in the empirical investigation of the process of objectification in perception. Permission of nstructor.

Variable course credit. Dr. Rankin.

213a. RESEARCH IN PERCEPTUAL DEVELOPMENT.

Participation in an on-going research program concerned with the development of strategies of perceptual activity from arly childhood to old age in both normal and perceptually andicapped individuals. Prerequisites: Psych. 160b or 230a 260a), Permission of the Instructor.

Dr. Whiteside.

14a,b. RESEARCH FROM THE ORGANISMIC-DEVELOPMENTAL PERSPECTIVE.

heory, findings and research problems deriving from an on-going research program — an organismic-developmental ystems approach to the analysis of perceptual and other ognitive processes — will be discussed. Empirical studies n problems relevant to the research program will be formulated and conducted by individual students. Papers describing the research program will be prepared. Prerequisite: Psychology 160b or 260a; Permission of the Instructor.

Dr. Wapner.

215b. LABORATORY IN CHILD RESEARCH.

An introduction to methods used in the study of child thought and behavior. Students will conduct research projects involving observational, experimental, and interviewing techniques. Discussions will consider means of data analysis as well as data collection.

Dr. Damon.

216b. FIELD OBSERVATION: COGNITIVE AND SOCIAL-INTERPERSONAL BEHAVIOR IN THE CLASSROOM SETTING.

Illustration of various cognitive and social-interpersonal models of human behavior in the classroom setting. Special consideration will be given to the work of Freud, Piaget, Skinner, Wertheimer, Lewin, and F. Kluckhohn. Students will carry out field observations, and formulate and execute their own individual projects. Limited: Permission of instructor required. Same as Education 289b.

Dr. Zern.

217b. RESEARCH ON DEVELOPMENT IN EARLY CHILDHOOD.

With roots in Piaget's theorizing, a constructivist-interactionist approach to the study of development in infancy and early childhood will be exemplified through the findings and problems from an on-going research project. Students will formulate pertinent studies, participate in their execution, and prepare papers describing their work. Prerequisites: Psych 160b or 230a (260a); 150; Permission of the instructor.

Dr. Uzgiris.

218a. SEMINAR IN REHABILITATION PSYCHOLOGY.

Psychological problems in everyday life situations, such as problems of physically disabled, mentally retarded, the aged, the poor, etc., will serve as topics. The primary focus is on interpersonal relationships and value problems.

Dr. Dembo.

219a,b. RESEARCH IN BRAIN DAMAGE AND BEHAVIOR.

Intensive investigation of the mechanisms underlying recovery of functions after traumatic injury to the central nervous system. Students will be required to participate in all phases of the research including selection of the problem, surgical procedure, behavior evaluation, and subsequent analysis. It is expected that a paper suitable for presentation at a scientific meeting or publication will result. Students involved will be expected to assume responsibility for the presentation and/or publication. Prerequisite: Physiological Psychology or its equivalent. Permission of instructor.

Dr. Stein.

220a. PRIMATE SOCIAL BEHAVIOR AND HUMAN EVOLUTION.

The study of the social behavior of monkeys and apes highlights central problems in psychological, zoological, and anthropological approaches to behavior. It also has important implications for the past evolution and present nature of man's sociality.

Dr. Thompson.

221a. BIOLOGICAL CORRELATES OF BEHAVIOR.

Not offered, 1973-74.

Special emphasis on sex differences.

TBA.

222a. THE PHYSIOLOGY OF BEHAVIOR.

A survey of current problems of Physiological Psychology including theories of brain function. Emphasis will be placed on the underlying physiological mechanisms which mediate human behavior, i.e., motivation, emotion, learning, perception, and memory. The course is constructed on a systems approach, designed to demonstrate the complex and interdependent relationship of the body and brain to behavior.

Dr. Stein.

223b. ADVANCED PRACTICUM IN PHYSIOLOGICAL PSYCHOLOGY.

A tutorial course available to students who desire to develop expertise in methods appropriate for the study of brain mechanism and behavior. The goal of the course will be to provide the student with the technical capacity to carry out individual research projects in which it may be necessary to perform surgery, prepare and carry out histological examinations, analyze electrophysiological data, etc. Project meetings and workshops in specialized areas will also be available. Prerequisite: Psychology 222a and 222b. Permission of instructor required.

Dr. Stein.

230a. INTRODUCTION TO QUANTITATIVE METHODS IN PSYCHOLOGY.

Introduction to statistics and its application in the verification of theories.

Dr. Rankin.

232a. PSYCHOLOGY OF LANGUAGE.

Not offered, 1973-74.

A psychological analysis of the use of symbols in language, dreams, and myth. Prerequisite: consent of the instructor.

Dr. Kaplan.

233b. COMMUNICATION: VERBAL AND NONVERBAL.

(1) An analysis of the term communication, and (2) a study of the varieties in communication patterns for different populations.

Dr. Weiner.

234b. SOCIAL DEVELOPMENT FROM INFANCY THROUGH ADOLESCENCE.

An examination of theories and research dealing with the process of socialization in the first two decades of life. Topics to be emphasized include: Attachment, imitation, role taking, and the development of social identity.

Dr. Damon.

240b. DEVELOPMENTAL APPROACHES TO BEHAVIOR.

A critical examination of presuppositions, methods, concepts and empirical inquiries of those concerned with the development of behavioral systems. Implications of developmental conceptualization for all of the life sciences will be discussed. Psychological theories of Freud, Piaget and Werner will be given special emphasis.

Dr. Kaplan.

241b. DEVELOPMENTAL APPROACHES TO LEARNING.

Applications of developmental psychology to slow learners in the classroom. Particular attention is paid to the work of Kephart, Rabinovitch and Cruickshank. Practicum work with children is required. Prerequisite: Psychology 160b or 260a; 209a.

Dr. Bibace.

242b. SEMINAR IN THE HISTORY OF PSYCHOLOGY.

Not offered, 1973-74.

Historical development of theories and methods in psychology. Prerequisite: consent of the instructor.

Dr. Kaplan.

243b. ADVANCED GENERAL PSYCHOLOGY: AN ORGANISMIC-DEVELOPMENTAL APPROACH.

Not offered, 1973-74.

Behavior will be analyzed from the organismic-developmental systems point of view, and will include treatment of organism-environmental transactions with respect to ontogenesis and aging, phylogenesis, pathogenesis, and microgenesis.

Dr. Wapner.

244a. PERCEPTUAL DEVELOPMENT.

Not offered, 1973-74.

Perceptual development is viewed as an active construction of the perceptual world by the individual. Special attention is paid to the reciprocal influences of cognitive and perceptual processes.

Dr. Whiteside.

246b. PRINCIPLES OF BEHAVIORAL EVOLUTION.

From a broad survey of the social systems of animals, this course will attempt to distill the general principles that have directed the evolution of animal behavior.

Dr. Thompson.

248a. CONCEPTS IN THEORIES OF PERSONALITY — NORMAL AND ABNORMAL.

Consideration and a critical analysis of (1) concepts and issues in theories of personality, and (2) concepts used to account for deviant behavior. Prerequisite: Psychology 172, 103.

Dr. Wiener.

249a. PSYCHOLOGY OF DEATH.

Beliefs and actions regarding death in diverse social context and cultures.

Dr. Bibace.

251a. COGNITIVE DEVELOPMENT.

The course critically surveys empirical findings and selected theoretical viewpoints (especially Piaget's) in the areas of perceptual development, development of scientific concepts, of logic and of language. The relations between cognitive development and, respectively, language and culture, are examined and discussed in connection with the theories surveyed. Active participation from students is encouraged. Permission of instructor required.

Dr. Falmagne.

252a. ROLE TAKING AND MORAL JUDGEMENT.

Theoretical conceptualization of the phenomenon of role taking will be critically evaluated. The relation of perspectivism to progressive cognitive change will be discussed. Moral judgement will be viewed as one type of role taking process.

Dr. Damon.

253a. RESEARCH IN ANIMAL BEHAVIOR.

Weekly meetings to discuss and evaluate on-going research and writing of the participants. Variable credit. Prerequisite: Permission of instructor.

Variable course credit. Dr. Thompson.

254b. SEMINAR IN VISUAL PERCEPTION.

Examination of the logic underlying the visual perception of objects. Permission of instructor.

Dr. Rankin.

255a. PSYCHOLOGY OF MUSIC.

An examination of the physics of musical sound, the structure and function of the auditory system, the history of music with special references to the evolution of scales, and the development of musical tastes, historically and ontogenitically.

Dr. Whiteside.

260a. THE HISTORY AND PRESENT STATUS OF INSTINCT.

It has long been argued and long contested that man and animal alike are guided in their social behavior by innate tendencies. This offering will emphasize the devious and irrational course of progress in a scientific field of study so loaded with social and philosophic implications. Permission of the instructor.

Dr. Thompson.

261a,b. HUMAN NEUROPSYCHOLOGY. Not offered, 1973-74.

Beginning with the neorological basis of behavior and neurobehavioral abnormalities, the field of cortical function is surveyed from the clinical, theoretical, and experimental viewpoints. Topics covered include aphasia, cerebral dominance, memory and its disorders, organic disorders of perception and emotion; methods used in clinical and experimental study.

Drs. Benson, Goodglass, Butters, Rosen, Howes, Zurlf, Cermak, Albert, Kaplan and Oscar-Berman.

262a. INFORMATION PROCESSING-MEMORY AND PERCEPTION.

Models of normal information processing and their application to neurologically impaired perceptual and mnemonic processes will be reviewed. An attempt will be made to show how different neurological disorders represent failures at distinctive stages of information processing. Clinical materials related to visual object agnosia, constructional apraxia, and various amnesic states will be presented and discussed in detail. Emphasis will be placed upon a critical examination of the theoretical and experimental investigations of Luria, Teuber, Talland, and Milner.

Dr. Butters, Cermak, Oscar-Berman.

263b. CLINICAL SEMINAR- LANGUAGE DISORDERS.

A patient with aphasia will be studied in depth each week on the basis of neurological and behavioral background data and testing, to be assigned in rotation to each qualified member of the class, with supervision by the instructor. Class session will include interview with patient and integrated interpretation of data from all sources.

Dr. Goodglass and Dr. Kaplan.

264a. CLINICAL SEMINAR - NON-LANGUAGE DISORDERS. Not offered, 1973-74.

A patient with neurobehavioral disorders other than aphasia will be studied in depth each week on the basis of neurological and behavioral background data, plus testing to be assigned in rotation to each qualified member of the class, with supervision by the instructor. Cases studied will include disorders of memory, perception, visuo-spatial ability, body image. Class session will include interview with patient and integrated interpretation of data from all sources. Permission of Dr. Goodglass.

Dr. Goodglass and Dr. Kaplan.

265a. INFORMATION PROCESSING - LANGUAGE. Not offered, 1973-74.

The phenomena of aphasia, alexia, and associated disorders of language will be considered in relation to theories of the storage and processing of verbal information. Relevant models dealing with phonology, word selection, syntax, and semantics will be discussed. Attention will be given to the special problems of using psychological theories based on experimental data from normal subjects to account for findings with brain-damaged patients.

Dr. Howes and Dr. Zurif.

266b. CEREBRAL DOMINANCE SEMINAR. Not offered, 1973-74.

The distinctive roles of the left and right hemispheres in man will be reviewed, first by examining alterations in language and nonverbal behavior under conditions of unilateral brain damage and section of the corpus collosum. A second approach will involve the examination of techniques used to investigate hemispherical functional asymmetry in the normally intact brain. Special attention will be devoted to hemispheric asymmetry in relation to different levels of language processing.

Dr. Goodglass and Dr. Zurif.

270b. ADVANCED TOPICS IN SOCIAL PSYCHOLOGY.

Intensive treatment of selected areas in social psychological research and theory, including: consistency theories in attitude formation and in interpersonal perception; attribution theory in self-perception; social/situational determinants of normal, everyday behavior, and of anti-social behaviors such as violence, criminality and riots. Permission of instructor required.

Dr. Laird.

276a. SYMBOLISM IN EVERYDAY LIFE; LANGUAGE, DREAMS, MYTHS, AND LITERATURE AND SCIENCE.

A critical examination of various theories of symbol-formation with special emphasis on the origins, structures and functions of dreams and myths. The relation of dream formation to psychopathology and the recent work on the physiological bases of dreaming will also be discussed. Permission of instructor.

Dr. Kaplan.

280a. CURRENT PROBLEMS IN CHILD PSYCHOLOGY.

Specific aspects of child behavior will be studied through analysis of the current research literature in the field. Familiarization with current concerns of the field, the historical roots of these concerns, as well as with various literature sources will be the aim of the seminar. Permission of instructor required.

One-half course value. Dr. Uzgiris.

284a. PIAGETIAN DEVELOPMENTAL PSYCHOLOGY. Not offered, 1973-74.

A critical examination of presuppositions, methods, concepts, observations and experimentations of the School of Geneva. Prerequisite: Psychology 150a or 150b.

Dr. Voneche.

285b. FUNCTIONS OF THE DIFFERENT EMOTIONS.

Following the rules of "Conceptual Confrontation" we will attempt to explicate a different function for each emotion in a way that systematically relates the emotions named in the English language. Permission of instructor.

Dr. deRivera.

288b. SELECTED PROBLEMS IN PSYCHOLOGY. Not offered, 1973-74.

Seminar to pursue topics in psychology of particular interest to advanced undergraduates. Each student will select a topic and lead the seminar for one or more meetings. The focus of this course will be to learn of the joys of ideas and of independent, scholarly inquiry.

Dr. Wiener.

296a,b. DIRECTED RESEARCH IN PSYCHOLOGY.

Independent study for qualified students not in the honors program. Prerequisite: approval of department chairman.

Staff.

297a,b. DIRECTED READINGS IN PSYCHOLOGY.

Independent study for qualified students not in the honors program. Prerequisite: approval of department chairman.

Credit to be arranged. Staff.

299. HONORS IN PSYCHOLOGY: SENIOR YEAR.

Students will carry out a research project under the direction of a member of the staff.

Staff.

300. DIRECTED READINGS IN DEVELOPMENTAL THEORIES. Not offered, 1973-74.

This is a course specifically oriented toward incoming students or those who are relatively unfamiliar with the concepts, methodologies, problems and scope of certain major theoretical systems in developmental psychology. Under the supervision of staff members and advanced graduate students, incoming students will be directed in certain readings designed to provide them with a reasonable acquaintance with both genetic-structural and neo-behaviorist developmental theories: Piaget, Werner, Freud, Erikson, Klein-Fairbairn-Winnicott on one side; Sears, Baer-Bijou, Bandura-Walters on the other. Students in this course will also be asked to read relevant works in theory of knowledge and philosophy of science pertaining to the developmental approaches. Periodic discussions of the materials read will be arranged with staff and advanced graduate students. After each bloc of readings, there will be intensive discussions with either a staff member or outside visitor.

Staff.

301. EXPERIMENTAL PERIOD IN PSYCHOLOGY.

During the first semester, the experimental method will be briefly treated in general terms and then developed more specifically with respect to the research of staff members, who will present their own current research with an emphasis on the special features of methodology they employ, including the links between method, theory, problems and findings. During the second semester, there will be informal ad hoc individual or group meetings, with faculty of the student's own choice, working toward developing an empirical study of a problem that the student may or may not develop into a Master's Thesis. At the end of the first semester, the student will prepare a progress report on the status of his formulation of an empirical problem. At the end of the second semester, the student will present a written report for deposit with the Department which covers the status of the student's formulation and research.

Dr. Wapner.

302. STATISTICAL METHODS.

Descriptive statistics, statistical inference and experimental design in psychology.

Dr. Rankin.

307a. PHYSIOLOGICAL PSYCHOLOGY: ADVANCED.

A survey of current problems, theories and controversies in physiological psychology. Course orientation will be similar to the introductory course with more attention to critical experiments and controversies. Also considered will be the neuroanatomy and neurophysiology of important CNS structures. Prerequisites: Some knowledge of experimental methods in psychology.

Dr. Stein.

307b. SELECTED PROBLEMS IN PHYSIOLOGICAL PSYCHOLOGY.

An advanced course in research methodology including surgical and stereotaxic techniques, histology, EEG recording and analysis and general methods for animal care. Open only to graduate students, and by permission of instructor.

Dr. Stein.

309. APPRENTICESHIP IN REHABILITATION: Introductory I.

Dr. Dembo.

310. APPRENTICESHIP IN REHABILITATION: Introductory II.

Dr. Dembo.

311a. CLINICAL METHODS I.

Analysis of cognitive functioning, especially intelligence, in adults by clinical-psychological tests, with practicum.

Dr. Baker.

311b. CLINICAL METHODS I.

Intelligence testing with children. Emphasis is placed upon conceptual frameworks and cognitive assessment.

TBA.

312. PSYCHOPATHOLOGY.

Introduction to psychopathology: Directly through naturalistic observation and interviews with seriously disturbed individuals; indirectly through clinical and experimental reports related to description and explanation in psychopathology. A paper on some specific psychopathological phenomenon (e.g., delusions, hallucinations) will be required.

Dr. Bibace.

313b. PRINCIPLES AND CONCEPTS UNDERLYING PSYCHOLOGICAL TESTS.

Theory and problems of psychological measurement with special reference to psychological tests.

Dr. Laird.

315b. ADVANCED CHILD PSYCHOLOGY.

Discussion of conceptions and current research pertaining to some question in the general area of human development in the early childhood years, such as imitation-identification, exploration and play, temporal organization of actions, etc.

Dr. Uzgiris.

316a. RESEARCH METHODS IN THE STUDY OF CHILDREN.

Survey of methods used in the study of children with emphasis on observational techniques. Questions of research strategy and analysis of findings in the study of developmental problems will be considered.

To be arranged.

317a. BEHAVIOR IN INFANCY.

The seminar will proceed from an examination of the capacities for functioning in the neonate to a consideration of the changes in those capacities during ontogenesis with a view toward understanding the infant's organization of his functioning in the world.

Dr. Uzgiris.

318. SEMINAR IN PSYCHOLOGY OF INTERPERSONAL RELATIONSHIPS AND REHABILITATION.

Value problems pertinent to interpersonal relations will be discussed, including value possessions, value losses, regaining of values and adjustment to value losses.

Dr. Dembo.

320a. ADVANCED SEMINAR IN GENETIC-STRUCTURAL THEORIES.

Not offered, 1973-74.

In this seminar, the major categories of all genetic-structural developmental theories (Freud, Werner, Piaget, et al) and the concepts and methodologies specific to different theories will be thoroughly examined and critically analyzed. This is an ongoing seminar comprised of advanced graduate students and including interested faculty. The seminar deals with the systematic roles of such concepts as "development," "structure," "regression," "system," "stage," etc.

Dr. Kaplan.

320b. ADVANCED SEMINAR ON ORGANISMIC-DEVELOPMENTAL APPROACHES TO BEHAVIOR.

Not offered, 1973-74.

Basic categories of the organismic-developmental approach to life sciences, with examination of the application of these categories to a wide range of problem areas in psychology.

Dr. Kaplan.

322a,b. PSYCHOLOGY OF LEARNING.

Theoretical viewpoints and experiments in the field of learning.

Dr. Stevens.

324a. THEORIES OF PERSONALITY.

This course covers three areas: (1) discussion of the philosophical bases of "theories" of personality; (2) consideration of some of these issues in the different theories (e.g., Freud, Kelly, Dollard and Miller); and (3) presentation and discussion of an alternative framework derived from the current work of Wiener, et al.

Dr. Wiener.

330a. GRADUATE SEMINAR ON TEACHING OF GENERAL PSYCHOLOGY.

Graduate Students who will participate as teaching assistants in General Psychology, will work on the formulation of all features of the course including assignments, responsibilities for lectures, readings, demonstrations, etc.

Dr. Wapner.

331a. CLINICAL METHODS, II

Application of various clinical methods in the assessment of personality.

TBA.

331b. CLINICAL METHODS, II.

Application of developmental theory to the clinical assessment of cognitive functioning and personality by means of projective techniques.

Dr. Cirillo.

332b. THEORIES OF PSYCHOTHERAPY.

Comparison of various theoretical approaches to psychotherapy.

Dr. Wiener.

333b. FROM COGNITIVE PSYCHOLOGY TO GENETIC EPISTEMOLOGY.

Not offered, 1973-74.

The course will be a sort of meditation on the growth of knowledge. Special attention will be given to questions such as: present decline of absolutes in science; epistemologic thresholds of the theory of explanation; forms of knowledge and their interface. Limited to students with a previous familiarity with the theories of Piaget and/or Werner.

Dr. Voneche.

334b. SEMINAR IN ANIMAL BEHAVIOR.

A consideration of contemporary issues in the phylogeny and ontogeny of behavior in general and social behavior in particular.

Dr. Thompson.

335a. PRAXIOLOGY. Not offered, 1973-74.

A study of human action seen from the standpoint of efficiency and as such unifying various domains like: body techniques, technology, crafts, ethics, social action, literature and religion.

Dr. Voneche.

336a. GENESIS OF THOUGHT AND ACTION.

Dr. Voneche and Dr. Kaplan.

337b. SEMINAR ON REASONING.

The central theme is an examination of the notion of logical competence and its alternatives, both from a definitional point of view and in connection with the experimental data on reasoning. Starting from a review of the current literature on reasoning, the seminar will then explore the reciprocal relationships between logic and language comprehension, and between logic and imagery. Various conceptions of logical competence will be discussed and related to the analogous issues in the psycholinguistics field.

Dr. Falmagne.

338a. CONCEPTIONS OF PERSON.

Examination of research and theory in the areas of self concept and of person perception with a focus on relationship between the two.

Dr. Laird.

339a. SEMINAR ON THE EFFECTS OF EARLY EXPERIENCE. Not offered, 1973-74.

An examination of recent evidence pertaining to the effects of various circumstances during early ontogenesis on the course of cognitive and motivation development aimed at conceptualizing these effects within a coherent framework.

Dr. Uzgiris.

340b. PHENOMENONOLOGY OF INTERPERSONAL RELATIONS.

Interpersonal phenomenon will be systematically examined with the methodology of "Conceptual Confrontation."

Dr. deRivera.

342b CHEMICAL COMMUNICATION.

A seminar dealing with the role of pheromones in mammalian behavior.

Dr. Stevens.

343b. PERCEPTION.

Examination of the logic underlying the perception of physical and social objects.

Dr. Rankin.

348b. SOCIAL PSYCHOLOGICAL PERSPECTIVES ON PROBLEMS OF ADJUSTMENT. Not offered, 1973-74.

Examination of "deviant" behavior as a socially defined phenomenon, including attention to: the process of attitude and belief formation and change; attribution of characteristics to the self and others; "cognitive" influences on motivation and emotions; socialization of children and adults; and the role of the deviant in society. Consideration of implications of these topics for behavioral change.

Dr. Laird.

349. APPRENTICESHIP IN REHABILITATION: ADVANCED, I.

Dr. Dembo.

350. APPRENTICESHIP IN REHABILITATION: ADVANCED, II.

Dr. Dembo.

351. CLINICAL METHODS, III.

TBA.

352. CLINICAL METHODS, IV.

Practicum in intake interviewing and psychotherapy.

Staff.

357a. SYMBOLIC BEHAVIOR.

A seminar focusing on the problem of representation of symbolization, with special attention to the representation of abstract or "intangible" conceptions (meanings) in concrete objects, events, patterns, etc. The seminar will concern itself with the developmental processes by which individuals represent meanings in dreams, political cartoons, spatial arrangements, material structures and finally linguistic forms. Emphasis throughout will be on research into symbolic representation.

Dr. Kaplan.

372b. PERCEPTUAL DEVELOPMENT: ADVANCED.

A critical treatment of theoretical and methodological issues concerning the reciprocal influences of cognitive and perceptual processes in the active construction of the perceptual world.

Dr. Whiteside.

380. RESEARCH IN PSYCHOLOGY.

Direction of individual students in their research.

Staff.

381. READINGS IN PSYCHOLOGY.

Critical analysis of literature in areas related to individual research.

Staff.

382a,b. PRACTICUM IN SCHOOL SYSTEM.

Organismic-developmental approach to assessment, remediation, and consultation in a school system.

Dr. Bibace and Agency Staff.

383a,b. PRACTICUM IN CONSULTATION WITH CLERGY.

Consultation in cognitive problem solving approach to human issues confronting clergy in various settings (e.g., general hospitals, mental hospitals, parishes, etc.).

Dr. Bibace and Agency Staff.

385. PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER, I.

Dr. Baker and Staff.

386. PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER, II.

Dr. Baker and Staff.

387. PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER, III.

Dr. Baker and Staff.

388. PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER, IV.

Dr. Baker and Staff.

SOCIOLOGY

DEPARTMENT FACULTY

Edward E. Sampson, Ph.D., Professor of Sociology; Chairman, Department of Sociology and Adjunct Professor of Psychology
Rona M. Fields, Ph.D., Associate Professor of Sociology
Stanford N. Gerber, Ph.D., Associate Professor of Social Anthropology
Sidney M. Peck, Ph.D., Associate Professor of Sociology
Robert J. Ross, M.A., Assistant Professor of Sociology
Archie Smith, Jr., Rev., Ph.D., Assistant Professor of Sociology; Associate Dean of the College

Adjunct Faculty
Alan E. Guskin, Ph.D., Acting President and Adjunct Professor of Sociology and Education

UNDERGRADUATE PROGRAM

The goals of theSociology Department are to enable persons to obtain a *working knowledge* of the theories, concepts, methods and findings of Sociology.

The program is conceptual and academic in that emphasis is placed upon students obtaining a thorough grasp of theoretical and methodological aspects of the discipline.

The program is problem focused and applied to the extent that emphasis is placed upon the importance of learning through involvement in ongoing, contemporary social issues and concerns.

The program is interdisciplinary and comparative, drawing materials and approaches from various social sciences. Field work and practicum courses are available to interested students in order to facilitate studies in cross-cultural theory and practice. Ethnographic experience is available in diverse cultural contexts.

The major in Sociology must take 8 courses in Sociology to be divided among:

I Introductory (Soc. 100, 120)
II Theory (Soc. 290, 291, 223, 245)
III Methods (Soc. 170, 271)
IV Practicum (Soc. 299)
V Core (Soc. 105, 140, 205, 243, 244, 247, 255, 256, 263)
VI Electives (all other courses offered in the Sociology department are considered electives and may be used to complete the 8 courses required for the major).

Majors are advised to complete their 8 courses by taking at least one introductory course, one methods course, at least two courses from the core list, at least one theory course, and at least one term of Soc. 299 in their senior year.

In addition, majors must take 4 courses in unrelated fields; by University rule, the student must take 9 courses in unrelated fields. Certain courses in most University departments are considered related: e.g. certain courses in Geography, Psychology, History, Government, Economics, Philosophy and Education. A more specific list of these courses is available in the Sociology Office.

GRADUATE PROGRAM

At the present time, the Department is not accepting students for the Master of Arts degree.

COURSES

100. INTRODUCTION TO SOCIOLOGY.

This is a general introductory course to the discipline of Sociology, intended mainly for students who wish to gain a broad, general overview of the field, its areas of study, methods of inquiry and conceptions and analyses of society.

Dr. Peck.

105a. SOCIAL PSYCHOLOGY.

An examination of the relationship between the individual and the social system as understood through the theories, methods, findings and applications of social psychology.

Dr. Fields.

110b. INTRODUCTION TO FEMALE STUDIES.

An overview of the problems, issues and research on sex role dichotomization and the bio-social systems which produce and maintain them. While particular emphasis will focus on material from Sociology and other relevant social sciences, topics from the humanities and the biological sciences will also be considered.

Dr. Fields.

120a. SOCIAL ANTHROPOLOGY.

An analysis of primitive society with a focus on social structure. The emphasis will be upon the development of a comparative perspective. The latter part of the course will explore phenomenological and existential anthropology and its implications for understanding other cultures. Two sections will be offered.

Dr. Gerber.

140b. CULTURE AND PERSONALITY.

An examination of theory, method, and findings in psychological anthropology. The relationship between culture and personality; basic personality types, national character; language and culture.

Dr. Gerber.

170. SOCIOLOGICAL RESEARCH METHODS.

This course will provide a general introductory survey to various methods employed in social scientific inquiry, including for example, the sample survey, interviewing, questionnaire approaches, participant-observation, life history approaches, experimental methods, etc. The course will examine general issues involved in research design and research evaluation as well as issues involved in selecting methods to suit particular research problems and questions.

Dr. Fields (Fall); Dr. Sampson (Spring).

200. DIRECTED READINGS.

Variable course credit.

Staff.

201. SPECIAL PROJECTS.

Variable course credit. Staff.

205a. ADVANCED TOPICS IN SOCIAL PSYCHOLOGY: TOWARDS A HUMANISTIC PERSPECTIVE.

This term, the course will examine several major sociological and psychological themes, with our particular focus being upon the feasibility and shape of a humanistic perspective in the social sciences. Related specific issues for consideration will include several of the following: loving and liking; responsibility and moral development; authority, authoritarianism, freedom; individuality and conformity; action, apathy, and knowledge; alternative frameworks of reality and the problem and dynamics of evil.

Dr. Sampson.

223a. THE PERSON AND THE SYSTEM: RATIONALITY AND COMMUNALISM IN RECENT HISTORY.

Everywhere men and women strive for love and personal acceptance, but they receive these only at certain places and times. This course is primarily an analysis of theories of rational efficiency and communal or primary needs in modern society. It examines recent protests as symptoms of alienation; revises orthodox theory of rational efficiency; shows the inherent limits of counter-cultural or communal ideologies; and suggests the contributions to understanding the strategy which critical theories may make.

Mr. Ross.

243b. POLITICAL SOCIOLOGY.

Politics, may, for certain purposes, be seen as the result of structures of sentiment and power from which particular policies and institutions emerge. This course examines, in theory and research, class and political behavior, the political economy of power, sources of conflict and stability in modern society and social movements.

Mr. Ross.

244b. RACE AND ETHNIC RELATIONS.

The purpose of this seminar is to enable the participant to begin to develop a theoretical framework for analyzing problems of racism and to conceptualize solutions to the problems consistent with the analysis.

Dr. Smith.

245a. THEORETICAL MODELS IN SOCIAL ACTION.

A critical evaluation of anthropological, sociological, and literary sources and their application to contemporary social problems.

Dr. Gerber.

247a. URBAN SOCIOLOGY.

The ethnic and other communities of the big cities will be examined through the literature of historical and community studies; these materials will provide the basis for interpreting urbanism and the politics of the recent period. The political machines, the functions of social policy and the problems of our big cities are some of the broader issues discussed.

Mr. Ross.

253b. CONFLICT AND POLITICAL PROCESS IN IRELAND.

An introduction to the socio-political context of the present conflicts in Ireland. Irish history, culture, social organization and social problems will be critically examined.

Dr. Fields.

254b. SOCIOLOGY OF RELIGION.

This course starts with an analysis of the breakdown of the medievel metaphysics and the founding of the modern world. The objective of this course is to introduce the student to a sociological perspective on religion and to apply this perspective to an analysis of the contemporary religious situation in particular and to the current status of epistemic communities in general. Theorists whose positions will be emphasized are: Durkheim, Weber, Mannhein, Eliade, Berger, and Schutz.

Dr. Smith.

256b. SOCIAL STRATIFICATION.

An analysis of the major dimensions of social stratification in contemporary society. Economic class, social status, power, class consciousness, social mobility and the consequences of class difference.

Dr. Peck.

260b. SMALL GROUP PROCESSES

The course will focus on interactive processes in small groups. In addition to studying the theoretical and empirical literature of the field and developing facility in process recording and analysis, the course will be organized into small groups which will critically reflect upon and analyze their own processes throughout the term.

Dr. Sampson.

263a. PROBLEMS OF DEVIANCE.

This course has two fundamental objectives: (1) to introduce the student to the literature, research, and conceptual problems in the field of deviance; and (2) to examine three conceptual frameworks out of which contemporary definitions of deviance emerge. The major purpose of this course is to increase the student's sensitivity to some of the major factors affecting deviant behavior which any social action program must take into account.

Dr. Smith.

265b. SOCIAL MOVEMENTS.

This course will discuss the general characteristics of modern social movements with the New Left and other protests of the sixties as extended case examples. Problems of recruitment, organization, and ideology will be analyzed. The form of the course will depend on the size of registration.

Mr. Ross.

290. CLASSICAL THEORY.

Starting with the statements of the classical tradition in Sociology (Weber, Marx, Mannheim, etc.) this course examines the large scale theories of the nature of the modern political system, concentrating on Western capitalism. We will attempt to understand the traditions of analysis of liberalism and Marxism and how they differ in judging both the actual nature of these societies and their presumed dynamics. From this starting point, we go on to examine the nature of the state in modern capitalism and the social forces which create and maintain political power.

Mr. Ross (Spring); Dr. Peck (Fall.

291b. CONTEMPORARY SOCIOLOGICAL THEORY.

An examination of the current major sociological theories and controversies. The work of Parsons, Merton, Homans, Dahrendorf, and such topics as functionalism, the nature of the social system, reductionism and conflict history.

Dr. Peck.

299. THESIS-SEMINAR.

The course combines seminar with independent study on selected topics. The course is intended for Senior Sociology majors. Each member of the Sociology faculty offers a set of topics and thesis-issues (indicated below); students should sign up with the faculty person whose areas of interest are most congruent with their own. Emphasis in the course is upon independent work undertaken with faculty guidance and supervision. This course meets existing Practicum requirements for Sociology majors. It is possible to take this as a year-course that results in the submission of a thesis, thereby making selected students eligible to be considered for Honors in Sociology; however; students meeting the Practicum requirement need only take the course for a single term or its equivalent.

THESIS-SEMINAR TOPICS

Rona M. Fields
- Political Socialization and Social Development
- Sex Role Socialization
- Medical Sociology
- Ethics and Social Responsibility in Research

Stanford N. Gerber
- Comparative study of...(ethnic communities, etc.)
- Race and Ethnic Relations
- Caribbean Studies

Sidney M. Peck
- Sociological Theory
- Labor Movements
- Selected topics to be announced

Robert J. Ross
- Social Change
- Urban and Political Sociology
- Classical Theory
- American Ethnic Groups
- Social movements, Social Planning
- Occupations

NOTE: These and other topics are admissible with one qualification: the theme of the group will be the history and development of the Sixties with special attentions to protest and problems.

Edward E. Sampson
  Issues and Topics in Social Psychology
  Sociology of Knowledge, Thought and Action
  Small Group Processes

Archie Smith, Jr.
  Sociology of Religion
  Symbolic Interaction
  Black Community and Social Planning
  Deviance/Delinquency

TECHNOLOGY AND MAN

PROGRAM COMMITTEE

Christoph Hohenemser, Ph.D., Associate Professor of Physics, Chairman*
Harvey Gould, Ph.D., Associate Professor of Physics, Acting Chairman
Harry C. Allen, Ph.D., Professor of Chemistry
Robert W. Kates, Ph.D., Professor of Geography
Michael McClintock, Ph.D., Visiting Professor of Physics
John T. Reynolds, Ph.D., Professor of Microbiology
John A. Davies, Ph.D., Associate Professor of Physics
Frank W. Puffer, Ph.D., Associate Professor of Economics
Allen E. Goodman, Ph.D., Assistant Professor of Government and International Relations

On leave of absence in 1973-74.

Technology and Man is a directed program of inter-isciplinary study with emphasis on the assessment of echnology in a social and political context. The goal of the rogram is to train individuals who are able to deal with olicy questions on the use and misuse of science and echnology, and who do so with the short and long range mitations of the natural environment in mind.

Although science and social science are both important n man-technology studies, the requirements of the Program on Technology and Man do not give equal weight to both. Instead, course requirements give special emphasis to achieving literacy in science, and provide for significant achievement in at least one discipline of science. The reason for this emphasis is two-fold: (1) many significant problems are accessible only with a thorough grounding in science; (2) in the nation's future, there is a significant need for managers of technology whose experience with science and technology is more than perfunctory.

The major in Technology and Man should be of interest to students with significant talent for science, whose goal is *not* work at the frontiers of basic science, but who wish to work in the complex interface between science and society. Some graduates of the program may define themselves in terms of the rapidly emerging new field of technology assessment. Others may enter broadly defined graduate areas such as resource management, geography, oceanography, and environmental science. The program should also be of interest to pre-medical and pre-law students, potential school teachers, community service workers, government regulatory officials and science writers.

The requirements for a major in Technology and Man are as follows.

(1) Ten semesters of basic natural science, with at least six semesters in a single discipline. For the present purpose, the natural sciences shall include Physics, Chemistry, Biology and Mathematics.

(2) Four semesters of courses in social science selected with advice of the Program Committee to fulfill the goals of the program.

(3) Three semesters of problem oriented courses on specific issues. In general, the problem oriented courses will be offered under the specific auspices of the Program Committee, will provide a distinctly multi-disciplinary approach, will have a significant, if not predominant, science input, and will in most cases be offered jointly by two or more faculty.

The choice of specific courses to meet the science and social science requirements must be made with approval of the Program Committee. The student should present his plan of study in the form of a written proposal to the Chairman of the Program Committee. Preparation of the proposal should be preceded by discussions with individual members of the Program Committee, particularly those who are affiliated with departments in which the student wishes to specialize.

The student who has intention to do graduate work is encouraged to investigate the minimum major requirements of the basic discipline of science in which he plans to concentrate, and may wish to fulfill these requirements along with the requirements of Technology and Man.

Because the Program on Technology and Man is interdisciplinary, it poses an unusually serious problem of comprehensive organization to the student. To evaluate the success of organization and integration, majors will be given a three-part comprehensive examination in their senior year. The three parts of the examination will be (1) basic science in a discipline of the candidate's choice; (2) basic social science in the discipline of the candidate's choice; (3) problems of Technology and Man in a special area of the candidate's choice. The examinations will be conducted under the auspices of the Program Committee with special assistance from departments and visiting examiners. The examinations will be offered in January. For those who fail, a second chance will be given in May. Successful degree candidates must eventually pass two of the three comprehensives.

Students who wish to receive Honors in Technology and Man must pass the comprehensive examination at the B+ level, and must present an acceptable undergraduate thesis.

The following courses satisfy the requirements of problem oriented courses. The courses are open to all qualified undergraduate and graduate students, and have no specific pre-requisites.

COURSES

10a. INTRODUCTION TO TECHNOLOGY AND MAN.

A course designed to raise several questions of far-reaching import that recur throughout man-technology studies. What is an acceptable level of technological sophistication? What is an acceptable human population? How long do we want to use the planet? Is the climate changing due to air pollution? Answers to these and similar questions will depend on ethics as well as detailed analysis of technology. For 1973-74, the course will examine these questions in the context of specific technologies, such as the automobile, the airplane, and the set of methods by which energy is used in a technological society. Readings will include Agnew, Commoner, Ehrlich, Hardin, Meadows, Platt and others. Analytical tools will be drawn from high school mathematics and natural science, or will be developed as part of the course.

Dr. McClintock.

101a. INTRODUCTORY CASE STUDIES. Not offered, 1973-74.

The course seeks through case studies to introduce the student to the kind of tools he will need in man-technology studies. The U.S. transportation problem, particularly in urban areas, provides a major focus. The scope of U.S transportation systems will be described in physical and economic terms, with emphasis on resources required. Concepts from economics, natural science, as well as other disciplines will be introduced as needed. The course will culminate with critical discussion of the Boston area transportation problem, and will include limited field work and experimentation.

Dr. Hohenemser and Dr. Puffer.

142a. ENVIRONMENTAL CHEMISTRY.

A study of the chemistry of the problems of the environment. Topics covered are chemistry of air and water pollution and possible solutions. Topics of interest include pollution from fossil fuels, oil pollution, pesticides, metal contamination, food additives, solid wastes. The laboratory primarily will make use of analytical techniques. Pre-requisites: Chemistry 130 or 132. Three lectures and one laboratory per week. (The course is cross-listed as Chemistry 142a).

Dr. Allen.

150. AQUARIUS: PLANNING FOR URBAN WATER RESOURCES.

Help wanted: Water resource planners for City of Aquarius to prepare 50 year plan for water supply. Water quality, flood control, and recreation. Includes opportunity to use advanced computer simulation. Group collaboration required. (The course is the same as Geography 150). Offered in 5th module.

Dr. Kates.

201b. ENERGY AND MAN.

The purpose of this course is to examine some of the consequences of man's expontentially growing utilization of energy. Review of the necessary principles from physics and chemistry, including conservation laws, the storage of energy in nuclei, atoms, molecules, solar energy and energy flow in the biosphere. Survey of man's past, present and expected future use of energy. Case studies in present energy technology, including hazardous side-effects. Assessment of future energy technology and their side-effects. Limitations, if any, to future energy use arising from resource depletion, pollution, global heat balance. Students will undertake task-force studies on various aspects of national and global energy policy. (The course is cross-listed as Geography 201b).

Dr. McClintock and invited guests.

211a. INTRODUCTION TO SYSTEMS ANALYSIS.

A course in the behavior of coupled dynamical systems. Applications to problems in population, epidemology, group dynamics, and management. Students will work with computer simulated models. No background in computer programming is required. Students may choose to design and construct electronic analog models. Discussion of world dynamics. Pre-requisite: Calculus.

Dr. Gould and Dr. Gottlieb.

235b. BIOLOGICAL SYSTEMS AND WATER POLLUTION CONTROL.

An attempt to deal with those problems associated with water pollution that are amenable to solution through the application of concepts and approaches of the biological sciences. The participants do not have to be Biology majors but will be expected to be literate in one or more of the scientific disciplines. Permission of instructor required. (The course is cross-listed as Biology 235b).

Dr. Reynolds.

256b. SCIENTIFIC INFORMATION AND SOCIETAL RESPONSE TO ENVIRONMENTAL HAZARD.

An exploratory research seminar on the relationship between the quality and presentation of scientific information and the societal response to environmental hazard of human origin. Part of an international collaborative research effort, the seminar is limited to 12 graduate students and advanced undergraduates with research interests in this topic. Participation includes attending a faculty seminar during the January reading period, independent research and tutorials during module 3, and group presentation of research during module 4. Permission of instructors is required. (The seminar is cross-listed as Geography 256b).

Dr. Kates and Dr. McClintock.

270. SPECIAL TOPICS IN TECHNOLOGY AND MAN.

Independent readings and/or experimental work.
Variable course credit. Staff.

271. HONORS IN TECHNOLOGY AND MAN.

Supervised research leading to an undergraduate thesis.
Variable course credit. Staff.

VISUAL AND PERFORMING ARTS

MUSIC

DEPARTMENT FACULTY

Relly Raffman, A.M., George N. and Selma U. Jeppson Professor of Music, Department Chairman
Wesley M. Fuller, M.Mu., Associate Professor of Music
Gerald R. Castonguay, A.M., M.Mu., Assistant Professor of Music
Susan Clickner, B.M., Assistant Professor (Affiliate) of Voice
Evelyn Fuller, M.Mu., Assistant Professor (Affiliate) of Piano
Virginia Leguia, M.S., Assistant Professor (Affiliate) of Flute
James Ross, M.M., Lecturer in Music
Allan Mueller, Affiliate in Piano
James Skinger, Affiliate in Guitar

UNDERGRADUATE PROGRAM

The department offers courses designed to teach students how to listen to music intelligently, to develop a comprehension of music on its own terms and to acquaint students with representative works from various periods of music history.

The music major includes the following courses:

Prerequisite: Music 120b (Rudiments), or placement examination.

Theory: 121, 122a, 123b, 124a, 125b.

Music History: 12a, 13b, 14a, 15b, 17b or one semester course credit in 117.

Related areas: a one-semester course in Fine Arts, Theatre Art or Film Studies; or a one-semester course in Esthetics.

A minimum essentials test, including sight-singing and dictation at a level of proficiency necessary for the successful pursuance of the major, must be passed during the sophomore year. A keyboard proficiency examination must be passed during the junior year. As a senior, the music major may, with the permission of the department, elect two semester courses of tutorial work in one or more of the following areas: Music History (118), Composition (128), or Theory (138). Those wishing to concentrate in a performance area must pass an audition at the beginning of the junior year. In addition, all majors must complete nine semester courses outside of Philosophy 16a (Esthetics), courses in visual and performing arts and literature.

Individual instruction in piano, jazz piano, flute, guitar, violin and voice will be offered for credit during the 1973-74 academic year. Arrangements for lessons should be made at the music office during the registration period. Practice rooms are available without charge.

COURSES

10a. INTRODUCTION TO MUSIC.

Designed for the non-major, this course is a prerequisite for entrance into all Music History or Survey Courses. No credit towards the major allowed. Open to freshmen. Repeated second semester.

Staff.

110a. INTRODUCTION TO MUSIC.

Special topics in music pedagogy. For majors only. One-half course value. Staff.

11a. SURVEY OF MUSICAL STYLE.

Designed for the non-major, the survey deals with the study of selected works of the major periods in Western Music from the early chant to the present. Prerequisite: 10a.

Staff.

120b. RUDIMENTS OF MUSIC.

An introduction to the fundamentals of music. No previous experience is necessary. Notation, ear-training, sight-singing, score reading, and elementary melodic and harmonic organization. Satisfies prerequisite for credit in Music 18 and entrance into Music 121.

Mr. Ross.

121. PRIMARY THEORY.

A study of the structure of tonal music. Analytical and compositional problems in homophonic, monodic and polyphonic textures. Basic orchestration. Ear-training, sight-singing and conducting. Prerequisite: 120b or entrance examination (given at 1st class meeting).

Mr. Raffman.

12a. MEDIEVAL AND RENAISSANCE PERIODS.

Not offered, 1973-74.

A survey of music before 1600. Prerequisite: 10a or 120b. Offered in alternate years.

Mr. Castonguay.

122a. THEORY: MODAL COUNTERPOINT.

Not offered, 1973-74.

Offered in alternate years. Prerequisite: 121.

Mr. Fuller.

13b. BAROQUE PERIOD.

Not offered, 1973-74.

A survey of music from 1600 to 1750. Offered in alternate years. Prerequisite: 10a or 120b.

Mr. Castonguay.

123b. THEORY: 18th-CENTURY COUNTERPOINT.

Not offered, 1973-74.

Prerequisite: 121. Offered in alternate years.

Mr. Raffman.

14a. CLASSICAL AND ROMANTIC PERIODS.

A survey of music from 1750 to 1900. Offered in alternate years. Prerequisite: 10a or 120b.

Dr. Castonguay.

124a. THEORY: 19th-CENTURY PRACTICE.

Prerequisite: 121. Offered in alternate years.

Mr. Raffman.

15b. TWENTIETH-CENTURY MUSIC.

A survey of early 20th-century masterworks. Representative composers: Debussy, Ravel, Prokofiev, Stravinsky, Bartok, Hindemith, Schoenberg, Berg and Webern. Offered in alternate years. Prerequisite: 10a or 120b.

Mr. Raffman.

125b. THEORY: 20th-CENTURY PRACTICE.

Prerequisite: 124b. Offered in alternate years.

Mr. Raffman or Mr. Fuller.

16b. CHAMBER MUSIC.

A survey of selected works of the major composers in the ield of chamber music from Haydn to Stravinsky. Trips to concerts in the surrounding area will be made whenever easible. Offered in alternate years. Prerequisite: 10a or 20b.

Dr. Castonguay.

17b. OPERA. Not offered, 1973-74.

With the help of translated librettos, recordings and selected eadings, a study is made of a group of operas representing all periods of music history, with emphasis on the many olutions to the combination of music and drama. Prerequisite: 10a or 120b. Offered in alternate years.

Mr. Fuller.

117. CONCERT CHOIR.

Prerequisite: Audition and permission of instructor.
One-quarter course value. Mr. Fuller.

8. PRIVATE INSTRUCTION IN NSTRUMENTS AND VOICE.

Offered in 1973-74: piano, jazz piano, voice, flute, guitar and violin. One quarter course credit per semester; credit is to be held in escrow until a half semester course credit is earned and prerequisite passed. Student enrolling in voice instruction must schedule 2 half-hour lessons per week at an extra quater-course charge.Prerequisite for credit: successful completion of Music 120b or passing of entrance examination to Music 121 (given in September).

Staff.

19a. INTRODUCTION TO NON-WESTERN MUSIC.

Music of Cultures not of the Western European tradition are studied. Specific courses considered will vary, but music of India, Japan, Africa, and China is among those included. Offered in alternate years. Prerequisite: 10a or 120b. For consortium: a music history or theory course.

Mr. Fuller.

19b. MUSIC OF THE AVANT GARDE. Not offered, 1973-74.

Innovations and developments of the earlier years of the 20th-century are examined in the works of the recent past: extended serial techniques, aleatory, electronic and computer music, neo-dadaism and multi-media. Offered in alternate years. Prerequisite: 15b or permission of instructor.

Mr. Fuller.

120a. HISTORY OF JAZZ: SEMINAR. Not offered, 1973-74.

Offered in alternate years. Prerequisite: 10a or 121a.
One-half course value. Mr. Raffman.

130a. JAZZ WORKSHOP. Not offered, 1973-74.

Prerequisite: permission of instructor. Those entering the workshop must also register in 131a and are expected to have had practical experience in jazz performance. Offered in alternate years.
One-half course value. Mr. Raffman.

131a. JAZZ THEORY. Not offered, 1973-74.

Prerequisite: permission of instructor. Those entering Jazz Theory must also register in either 120a or 130a. Offered in alternate years.
One-half course value. Mr. Raffman.

118. SENIOR TUTORIAL IN MUSIC HISTORY.

Majors only. Permission of instructor.

Staff.

128. SENIOR TUTORIAL IN COMPOSITION.

Majors only. Permission of instructor.

Staff.

138. SENIOR TUTORIAL IN THEORY.

Majors only. Permission of instructor.

Staff.

148. SENIOR TUTORIAL IN PERFORMANCE.

Majors only. Audition must be passed at beginning of junior year.

Staff.

140a. ELECTRONIC MUSIC.

Group and individual instruction in electronic composition and analysis. Studio is equipped with Buchla electronic music synthesizer. Visits will be made to other studios throughout the New England area. Prerequisite: permission, 120b or 121. Offered in alternate years.

Mr. Fuller.

FINE ARTS

DEPARTMENT FACULTY

Donald Krueger, M.F.A., Associate Professor of Fine Arts; Associate Chairman of Fine Arts
Samuel P. Cowardin, III, Ph.D., Associate Professor of Fine Arts
Sante Graziani, M.F.A.,Associate Professor (Affiliate) of Fine Arts
Peter M. Barnett, Ph.D., Assistant Professor of Fine Arts.

UNDERGRADUATE PROGRAM

Courses in art are designed to develop understanding and sensitivity in visual arts and to enable students to think and communicate visually. Two programs for the major in fine arts are offered, one in art history and one in studio art.

Admission to the art history major program requires at least a B in Fine Arts 11 (or an equivalent course) and staff approval. Students must complete 6 courses in art history beyond the introductory level, 4 studio courses, 2 courses in related areas and a senior tutorial in art history.

Work for the studio art major is done at the School of the Worcester Art Museum. Clark students are admitted to study at the school by portfolio evaluation and permission of the Fine Arts Chairman and are expected to observe the regulations and calendar of the School. Studio majors must complete a minimum of 10 studio courses, 2 courses in art history (normally Fine Arts 11) and 2 courses in related areas. Depending upon professional interest, the student is advised to elect studio courses beyond the required minimum, up to 16 courses.

Related areas include: film studies, theater arts, music and aesthetics.

COURSES

11. INTRODUCTION TO WESTERN ART.

Following a brief introductory section, the course treats significant works of architecture, sculpture, and painting in the light of their times. Open to freshmen.

Dr. Cowardin, Dr. Barnett.

12b. SURVEY OF PAINTING.

A general introduction to the art of painting, covering a wide range of examples from East and West. Open to freshmen. May not be counted in addition to Fine Arts 11.

Dr. Cowardin.

88. DIRECTED READINGS IN FINE ARTS.

Staff.

89. SPECIAL PROJECTS IN VISUAL ARTS.

Independent studio art study. By permission of the instructor.

Mr. Krueger.

99b. SENIOR TUTORIAL IN ART HISTORY.

Staff.

110a. THE ART AND ARCHEOLOGY OF GREECE AND ROME.

Open to freshmen. See Classics listing.

Mrs. Toepel.

115b. SELECTED SUBJECTS IN MEDIEVAL ART.

Not offered, 1973-74.

Dr. Cowardin.

120a. ITALIAN RENAISSANCE ART: 15th CENTURY.

Not offered, 1973-74.

Offered in alternate years.

Dr. Cowardin.

121b. ITALIAN RENAISSANCE ART:16th CENTURY.

Not offered, 1973-74.

Offered in alternate years.

Dr. Cowardin.

122b. MICHELANGELO AND THE HIGH RENAISSANCE.

Concentrates on Michelangelo's work in architecture, sculpture and painting, taking into account personal, religious, ntellectual, and political influences in his life. His style will be viewed in relation to the Renaissance background as well as the Mannerist trends of the sixteenth century. Offered rregularly.

Dr. Cowardin.

123a. VENETIAN ART.

Art in the Veneto region from the twelfth century through the eighteenth, with emphasis on the Renaissance. Offered rregularly.

Dr. Cowardin.

130a. 17th CENTURY — THE HIGH BAROQUE.

The course will deal with the principal masters of European painting in the seventeenth century. It will emphasize close visual analysis of particular works, in order to isolate the expressive intention of each artist, as reflected in devices and echniques he employs. There will be a secondary emphasis on the social circumstances which underlie the broad range of national styles. Offered in alternate years.

Dr. Barnett.

131b. 18th CENTURY — ROCOCO TO REVOLUTION.

The course is a continuation of the above, but the emphasis will be reversed. There will be primary preoccupation with relationships between the art of the period and the social circumstances which produced it. There will be an attempt to relate events in painting both to political and social events and to parallel currents in the arts in general. Discussion will cover the broad social and philosophical questions raised by the painting examined.

Dr. Barnett.

140a. 19th CENTURY — THE ROMANTIC AGE.

Coverage from the French Revolution through the post-impressionist period, with special attention to the redefinition of art, its relation to reality and to society.

Dr. Barnett.

141b. 20th CENTURY — THE MODERN AGE.

A continuation of the above through the contemporary period with emphasis on developing personal approaches to contemporary art.

Dr. Barnett.

150a. INTRODUCTION TO ORIENTAL ART: ANCIENT NEAR EAST AND INDIA.

Offered in alternate years.

Dr. Cowardin.

151b. INTRODUCTION TO ORIENTAL ART: CHINA AND JAPAN. [formerly 19b.].

Offered in alternate years.

Dr. Cowardin.

160a. ELEMENTS OF ARCHITECTURE.

Not offered, 1973-74.

A non-chronological treatment of architectural elements. Divided into two segments, the first a theoretical discussion of topics such as space, function, structure and movement, the second a conceptual approach to design, involving students in their own designing. Offered in alternate years.

Dr. Barnett.

161b. MODERN ARCHITECTURE.

Not offered, 1973-74.

Architecture of the 19th and 20th centuries, with a strong emphasis on the principal figures of the modern movement, and on developments in urban design and theory and the divergent philosophies they represent. Offered in alternate years.

Dr. Barnett.

165b. PRINTS AND PRINTMAKING.

A view of graphic art both historically and technically with special attention on the response of graphic media to the aesthetic needs of the age in which it appears. First-hand acquaintance with materials and techniques will complement class material. Offered in alternate years.

Dr. Barnett.

170a. VISUAL DESIGN.

A studio course on campus, designed to introduce the student to the nature of visual language and the creative process and to develop abilities for original creative thought and action. Basic studio problems, primarily two dimensional, in organization, color relationships, design and communication, and analytical studies, through graphic means, of form and space. Work in addition to the regularly scheduled six studio hours will be required. Open to non-majors and freshmen.

Mr. Krueger.

171b. VISUAL DESIGN.

A continuation of 170a. to include the study of depth and plastic illusion and explorations of basic three-dimensional structural principles and practice. 170a. is not prerequisite but is recommended. Open to non-majors and freshmen.

Mr. Krueger.

172a. VISUAL STUDIES.

A studio course on campus stressing individual development of expressive and communicative visual arts skills. Independent study in traditional, contemporary and experimental forms and materials is encouraged and individual projects may be undertaken by the student with special interests or abilities. 170a, 171b, or the equivalent are recommended as preparation. Open to non-majors. Enrollment by permission of the instructor.

Mr. Krueger.

173b. VISUAL STUDIES.

A continuation of 172a. 172a is not a pre-requisite but is recommended.

Mr. Krueger

176a. PERCEPTION AND SELECTION IN DRAWING.

A course in drawing from life, emphasizing skills in seeing forms and relationships, and finding appropriate methods of transcribing them. Free expression and exploration of media not emphasized. No previous training expected. CR/NR. By permission of the instructor.

One-half course value. Dr. Barnett.

188. PHOTOGRAPHY [at the Worcester Craft Center).

A beginning course and an intermediate/advanced program. Practice in the techniques and aesthetics of photography as a medium of personal expression. Lectures, field trips, and discussions supplement studio and dark room work. A variable setting 35mm or 2-1/4 x 2-1/4 camera is required. Materials fee. Open to non-majors and Freshmen. Enrollment by permission of the Art Department Chairman.

Craft Center Staff.

188. PRINTMAKING [at the Worcester Craft Center].

A course designed to familiarize the student with one or more of the graphic techniques: etching, engraving, woodcut, silkscreen. For experienced students the course will emphasize technique and quality in printmaking.. Materials fee. Open to non-majors and Freshmen. Enrollment by permission of the Art Department Chairman.

Craft Center Staff.

188. CERAMIC DESIGN [at the Worcester Craft Center].

An exploration of form, texture and color using basic clay-working methods of hand-forming, coil building and slab construction. Emphasis is on developing an awareness of the elements of sculptural design rather than an attempt to produce utilitarian pottery. Materials fee. Open to non-majors and Freshmen. Enrollment by permission of the Art Department Chairman.

Craft Center Staff.

199.

General designation for all courses at the School of the Worcester Art Museum. Ordinarily open only to majors. See Museum School catalog for complete listing of courses.

Museum School Staff.

THEATRE ART

DEPARTMENT FACULTY

Neil R. Schroeder, Ph.D., Associate Professor of Theatre Art, Associate Chairman of Theatre Art, Clark University
Victor Becker, M.F.A., Instructor in Theatre Art, College of the Holy Cross
Edward J. Herson, M.A., Lecturer in Theatre Art, Director of the Division of Theatre Art, College of the Holy Cross
Donald W. Ilko, Ph.D., Assistant Professor of Theatre Art, College of the Holy Cross
Zeev Raviv, D.F.A., Associate Professor of Theatre Art, Clark University

UNDERGRADUATE PROGRAM

The program in Theatre Art is offered through the Worcester Consortium for Higher Education. It is designed to give students both practical and scholarly experience in all phases of theatre. Courses are open to qualified undergraduates who are willing to devote the time and energy which are necessary for their completion. They are intended to develop theatre artists with a sound humanistic education and to prepare those who are interested for graduate training in educational and professional theatre.

Students who take courses in theatre will be expected as part of their course work to participate in productions of the Theatre Art Program at Clark University and at Holy Cross. Any student may apply for an acting or technical position in the plays of the annual season at Clark or Holy Cross by contacting Professor Neil Schroeder at Clark or Mr. Edward Herson at Holy Cross.

Registration in any course in Theatre Art may be made only by permission unless otherwise stated in the Course Announcements for each term. Clark students who wish to take courses in the field should obtain permission *for all courses which require it* from Dr. Schroeder. Entering students who plan to take courses should see Dr. Schroeder before they register for their first term.

Many courses are offered at Holy Cross. In most cases transportation will be supplied by the Worcester Consortium bus.

The General Program. Through the Worcester Consortium and inter-departmentally at Clark, courses are available in the following areas, acting, directing, technical theatre, design, theatre history and criticism, and dramatic literature. Students who wish to try or test their skills in any of these areas on an elective basis are welcome to apply.

The Theatre Art "Minor" or Double Major. Students who wish to design a minor or double major in Theatre Art are welcome to do so under the direction of Dr. Schroeder. Each program will be designed to meet the individual student's specific needs. While some may wish to develop a program independent of other academic concerns, others may wish to integrate their program with other disciplines such as Music, Fine Arts, Film, English, Modern Languages and Literatures, Philosophy, Psychology, or Education.

The Theatre Art Major. For those who are interested, a major in Theatre Art is available which trains students in the fundamentals of theatre and prepares them for further training and experience. Students may concentrate in one of the following areas: acting, acting and directing, technical theatre and design, theatre history and criticism and dramatic literature, or, if practical, an area of the student's own choice.

There are no specific courses prescribed for the major; each student's program will be designed according to his specific interests under the direction of Dr. Schroeder. Usually each major will be required to take at least one basic course in each of the following: acting, directing, technical theatre and design. In addition, he will usually be expected to take at least four advanced courses in the area of his concentration, at least four courses in theatre history and criticism and drama, and approximately four prescribed courses in related fields. Theatre Art majors should plan their programs early, for many of the fundamental courses should be taken before the junior year.

COURSES

The following courses are taught at Clark University. Unless otherwise specified in the Course Annoucement for each term, students must obtain permission to enter each course from Dr. Schroeder.

88. DIRECTED READINGS.

A sequence of structured readings on a given topic approved and directly supervised by the instructor. Prerequisite: consent of instructor.

Variable course credit. Staff.

89. SPECIAL PROJECTS.

Independent research on a particular problem, or an original creative project, directly supervised by the instructor. Prerequisite: consent of instructor.

Variable course credit. Staff.

101. BASIC ACTING I.

An introduction to the actor's skills, the course will concentrate upon an applied phonetic approach to speech and articulation, theatre games and exercises for stage movement, and the elements of role playing. No prerequisite: open to experienced as well as inexperienced actors.

Dr. Schroeder.

102. BASIC ACTING II.

A continuation of Basic Acting I, with increasing emphasis upon the problems of role playing. Prerequisite: Theatre Art 101 or permission of instructor.

Dr. Schroeder.

103. CREATIVE AND IMPROVISATIONAL ACTING I.

An introduction to the Actor's skills, the course will consist of a series of improvisations, theatre games and exercises, and selected scenes from plays in which the basic elements of acting — the processes involved in creative imagination, improvisation and spontaneity, and the interaction between voice, body, and emotion — will be stressed. No prerequisite: open to experienced as well as inexperienced actors.

Dr. Raviv.

104. CREATIVE AND IMPROVISATIONAL ACTING II.

A continuation of Creative and Improvisational Acting I. Prerequisite: Theatre Art 103 or permission of instructor.

Dr. Raviv.

109. VOICE AND DICTION.

An intensive applied phonetic approach to articulation, voice production, and speech. Special focus on speech for the stage and the correction of regional dialects and idiosyncracies. No prerequisite.

Dr. Schroeder.

141 DIRECTING I.

An introduction to the fundamentals of directing for the stage. Prerequisite: Theatre Art 101 or 103 or permission of instructor.

Staff.

151. THE CLASSICAL THEATRE AND ITS INFLUENCE.

A survey of the theatres of ancient Greece and Rome and their influence upon the theatres of the Renaissance. Included will be a study of the origin of the theatre, the form and substance of theatrical presentations in each period, and the study of several representative plays from each period. No prerequisite.

Dr. Schroeder.

182. MODERN DRAMA: DEPARTURES FROM REALISM.

An in-depth study of 15-20 plays of European and American playwrights — an examination of the most important departures from the realist formula of playwriting as it materialized towards the end of the 19th Century. The theory and techniques of Expressionism, Surrealism, Epic, the Grotesque and Absurd forms of drama, among others, will be analyzed against the background of general development in theatrical production. The readings will include some important introductions and essays concerning the dramatic forms. No prerequisite.

Dr. Raviv.

210. ACTOR'S WORKSHOP.

A study of scenes — characters and situations — from various dramatic styles and modes: the realistic, poetic, tragic, comic, etc. No prerequisite.

Dr. Raviv.

202. HISTORICAL STYLES OF ACTING.

A study of the problems confronted by the actor when performing in plays written in the past. Several major periods of theatre history and their acting styles will be investigated. The student will be expected to act in scenes from those periods and translate the essence of the style into meaningful modern terms. Prerequisite: Theatre Art 102 or 104 or permission of instructor.

Dr. Schroeder.

205. ADVANCED TUTORIAL IN ACTING I. Not offered, 1973-74.

Special study and coaching in acting problems for experienced actors only. Prerequisite: Theatre Art 201 or 202; Theatre Art 141; at least two courses in drama and/or theatre history.

Staff.

206. ADVANCED TUTORIAL IN ACTING II. Not offered, 1973-74.

Special study and coaching in acting problems for experienced actors only. Prerequisite: Theatre Art 205.

Staff.

241. DIRECTING II. Not offered, 1973-74.

An intensive study of the problems of directing for the stage. Scene study and the short play. Prerequisite: Theatre Art 102 or 104; Theatre Art 141; at least two courses in drama and/or theatre history.

Staff.

245. ADVANCED TUTORIAL IN DIRECTING I. Not offered, 1973-74.

Special study and coaching in problems of directing for experienced directors only. Prerequisite: Theatre Art 241.

Staff.

246. ADVANCED TUTORIAL IN DIRECTING II. Not offered, 1973-74.

Special study and coaching in problems of directing for experienced directors only. Prerequisite: Theatre Art 245.

Staff.

251. THE ELIZABETHAN THEATRE.

An examination of the important documents — visual and literary — pertaining to the nature of the theatre environment during the Elizabethan era. The study will include all aspects of theatre production, the playhouse, actors, scenery, costumes and audience. An attempt will be made to reconstruct some actual production of Elizabethan plays as they might have been produced during that time. Prerequisite: at least two courses in drama and/or theatre history.

Dr. Raviv.

286. SEMINAR: IBSEN.

An intensive study of the major plays of Ibsen and criticism of his life and work. Independent research and study is emphasized. Prerequisite: at least two courses in drama and/or theatre history and permission of instructor.

Dr. Schroeder.

The following courses are taught at Holy Cross. All courses taught at Holy Cross are numbered 199; differentiation is by title only. Permission from Dr. Schroeder is necessary to enter each course. All courses are worth one course credit; consult the Course announcement each term for scheduling and availability. Holy Cross courses may be interchanged with equivalent Clark courses for fulfillment of requirements and prerequisites.

199. ACTING I - BASIC.

Study and practice of the basic techniques of producing good voice and speech, relaxation, breath control, phonation, resonance and proper formation of the sounds of English and correction of regional accents. Work on improvisatory techniques and elementary work in interpretation are also studied.

199. ACTING II - BASIC.

Development of the techniques learned in Acting I. Intensive study and work on scenes for class presentation. Prerequisite: Acting I.

199. ACTING III - STYLES.

Analysis and interpretation of plays from various periods of theatre history. Investigation of the style of performance as it was and as it can be communicated to contemporary audiences. Prerequisite: Acting II. Prerequisite or corequisite: Technical Theatre I.

199. ACTING IV - STYLES.

Continuation of Acting III. Prerequisite: Acting III.

199. ACTING V - SCENE STUDY.

Laboratory: Performance. Prerequisite: Acting IV. Prerequisite of corequisite: Design I.

199. ACTING VI - SCENE STUDY.

Continuation of Acting V. Prerequisite: Acting IV or Acting V.

199. TECHNICAL THEATRE I - BASIC.

A basic introduction to the techniques of theatre architecture, technical drafting, mechanics, construction, hardware, and lighting. The two primary goals are the technical understanding of space and the ability to solve, with the means available, the practical problems which arise in the realization of a play on stage.

199. TECHNICAL THEATRE II - INTERMEDIATE.

A continuation in detail of the investigation into one of the many technical fields, offering a more complete understanding and familiarity with, for example, lighting, mechanics, or special problems in construction.

199. DESIGN I - BASIC.

An introduction to the problems of self expression in stage design especially in the translation of ideas into visual terms. Includes sketching, basic drafting, and an investigation of two- and three-dimensional space as the means for understanding the visual concepts in stage design.

199. DESIGN II- BASIC.

An introduction to the media, techniques, and procedures for dealing with the translation of dramatic conceptions into tangible and practical design. Includes a basic understanding of sketching, rendering, models, and the drafting of floor plans, elevations, and sectional views as tools for turning imagination into reality.

199. DESIGN III - TECHNIQUES.

A further study of the graphic means of expressing stage design conceptions. Also includes a basic analysis of the historical and stylistic approaches that are available to the contemporary designer in dealing with all plays.

199. DESIGN IV - TECHNIQUES.

A further study of several plays' scenic (or costume) requirements and the completion fo the design procedures necessary to fulfill them. Course work will be coupled with practical design assignments for plays produced in the theatre whenever possible.

199. DIRECTING I - BASIC.

Script analysis and staging techniques. Short practice scenes. Prerequisite: Acting II. Prerequisite or corequisite: Design I.

199. DIRECTING II - SCENES.

Communication of the theatrical image to actors and designers, and through them to the audience. Long scenes and one-acts. Prerequisite: Directing I.

199. DIRECTING III - STYLES.

Styles. Long scenes and short plays. Prerequisite: Directing II.

199. DIRECTING IV - THE FULL-LENGTH PLAY.

Complete production of the full-length play. Prerequisite: Directing III; permission of instructor and Director of Division.

199. AMERICAN MUSICAL THEATRE.

A study of the American Musical from 1900 to the present. The development of the book musical and the revue, and an analysis of the musical form will be studied.

FILM STUDIES

DEPARTMENT FACULTY

Anthony W. Hodgkinson, Associate Professor of Film Studies; Associate Chairman of Film Studies Program

UNDERGRADUATE PROGRAM

The program in Film Studies is designed to enable the student to acquire a critical understanding and appreciation of our youngest art. A full understanding of Film invokes two related activities: (1) the viewing, discussion and evaluation of a large number of significant works; and (2) initial attempts, through simple film and/or video production exercises, to express oneself in a technically demanding medium.

The latter, expressive function may at present best be explored through courses offered through the Consortium at Worcester State College, or in the University's Summer School. The emphasis of current courses in the Film Studies Program is on the viewing/discussion/assessment level; they are designed to have particular reference to the historical and social impact of Film.

There is no major offered in Film Studies at the present time.

COURSES

10a,b. ELEMENTS OF FILM.

A survey of the varied techniques used in the making of all screen communications (film, television, video): the invention of the language; silent film narrative; editing; music; speech and sound; color; varied motion; kinestasis; cineverite; artificial film. Lecture/screenings; term papers and readings. Repeated second semester. Prerequisite to all Film Studies courses. Open to Freshmen.

Mr. Hodgkinson.

11a. ASPECTS OF FILM HISTORY II.

A series of lecture/screenings in which various facets of the 75 years of cinema will be explored. This year's course will cover a history of the non-fiction film. Analytical term papers and readings. Prerequisite: 10a or 10b.

Mr. Hodgkinson.

12b. FILM AND SOCIETY I.

A thematic exploration of the ways the cinema has reflected/affected its contemporary society. Content will vary each time course is offered. This year, an attempt will be made to explore films of the Depression era. Lecture/screenings; analytical term papers and readings. Prerequisite: 10a or 10b.

Mr. Hodgkinson.

13a. GREAT FILM DIRECTORS II.

A series of lecture/screenings in which the canon of work of various significant directors will be studied and assessed. The subject this year is Luis Bunuel. Analytical term papers and readings. Prerequisite: 10a or 10b.

Mr. Hodgkinson.

14b. THEORIES OF FILM.

A study of some of the aesthetic and social theories of Film. Krakauer, Dickinson, Huaco, etc. Prerequisite: 10 a or 10b and two of 11a, 12b or 13a. Analytical term papers.

Mr. Hodgkinson.

88a,b. DIRECTED READINGS.

A sequence of structured readings on a given topic approved and directly supervised by the instructor. Prerequisite: consent of instructor.

Variable course credit. Mr. Hodgkinson.

89a,b. SPECIAL PROJECTS.

Independent research on a particular problem, or an original creative project, directly supervised by the instructor. Prerequisite: consent of instructor.

Variable course credit. Mr. Hodgkinson.

100a. ELEMENTARY FILM PRODUCTION.

A practical workshop in Super-8mm film production. Student work will be analyzed and criticized. Prerequisite: 10a. Limited to 10 students. (This course is offered in the Consortium at Worcester State College and is the same as W.S.C.'s ME 340.)

Clark University reserves the right to amend any administrative policy described in this Catalog without prior notice to persons who might thereby be affected. Information about expenses applies to the 1973-1974 academic year.

FACULTY

Members of the faculty and officers for 1973-74 are listed alphabetically with their titles, degrees and years at Clark University. Persons no longer on the faculty but who served during the previous year are included also.

Acting President

ALAN E. GUSKIN, Ph.D. Acting President, Professor of Education and Sociology. B.A., Brooklyn College, 1958; Ph.D., University of Michigan, 1968. (1972-)

Emeriti

HOWARD B. JEFFERSON, Ph.D. LL.D., L.H.D., Litt.D., President, Emeritus; A.B., Denison University, 1923; Ph.D., Yale University, 1929; LL.D., Denison University, 1948, Hillsdale College, 1952, Northwestern University, 1958; L.H.D., Colgate University, 1951, Assumption College, 1956; Litt.D., College of the Holy Cross, 1962; L.H.D., Clark University, 1967; LL.D., Emerson College, 1968. (1946-67)

CLAUDE W. BARLOW, Ph.D. Professor of Classics, Emeritus. (1947-72)

JESSE L. BULLOCK, Ph.D., Professor of Chemistry, Emeritus. (1926-59)

GUY H. BURNHAM, A.M., Instructor in Geography and Cartographer, Emeritus. (1922-66)

LYDIA P. COLBY, B.S., Registrar, Emeritus. (1932-66)

TAMARA DEMBO, Ph.D., Professor of Psychology, Emeritus. (1953-72)

GEORGE E. HARGEST, M.B.A., Associate Professor of Economics, Emeritus. (1942-71)

SHERMAN S. HAYDEN, Ph.D., Professor of International Relations, Emeritus. (1947-73)

ROBERT S. ILLINGWORTH, A.M., Ed.M., Professor of Speech and Drama, Emeritus. (1931-58)

FREDERICK W. KILLIAN, LL.B., Associate Professor of Sociology, Emeritus. (1947-70)

VERNON JONES, Ph.D., Professor of Educational Psychology, Emeritus. (1926-68)

DWIGHT E. LEE, Ph.D., L.H.D., Jacob and Frances Hiatt Professor of European History, Dean of the Graduate School, Emeritus. (1927-67)

JAMES A. MAXWELL, Ph.D., L.H.D., Professor of Economics, Emeritus. (1924-67)

RAYMOND E. MURPHY, Ph.D., Professor of Economic Geography, Emeritus. (1946-68)

THEODORE NICOL, Ph.D., Associate Professor of Romance Languages, Emeritus. (1946-69)

PERCY M. ROOPE, Ph.D., Professor of Physics, Emeritus. (1921-62)

SAMUEL VAN VALKENBURG, Ph.D., LL.D., Professor of Geography, Emeritus. (1927-29, 1932-62)

Faculty and Officers of Instruction

DAVID ABRAHAM, M.A., Assistant Professor of English. B.A., Brooklyn College 1966; M.A., University of Mass., 1968. (1973-)

VERNON AHMADJIAN, Ph.D., Professor of Botany, Dean of the Graduate School; Coordinator of Research. A.B., Clark University, 1952; A.M., 1956; Ph.D., Harvard University, 1960. (1959-68, 1969-)

HARRY C. ALLEN, JR., Ph.D., Professor of Chemistry, Chemistry Department Chairman, B.S., Northeastern University, 1948; Sc.M., Brown University, 1949; Ph.D., University of Washington, 1951. (1969-)

DONALD H. AMARAL, Ed.M., Coach and Coordinator of Intramurals and Recreation. B.S., Boston University, 1961; Ed.M., 1965. (1971-)

ALBERT A. ANDERSON, Ph.D., Associate Professor of Philosophy. B.A., Morningside College, 1960; M.A., Boston University, 1963; Ph.D., Boston University, 1971. (1973-)

JAMES D. ANDERSON, M.A., Lecturer in Romance Languages. B.A., Brooklyn College, 1957; M.A., Florida State University, 1959. (1971-)

KARL O.E. ANDERSON, Ph.D., Professor of English. A.B., Harvard University, 1927; A.M., 1928; Ph.D., 1942. (1945-)

MARGARET E. ANDERSON-OLIVO, Ph.D., Assistant Professor (Affiliate) of Physiology. B.A., Augustana College, 1963; Ph.D., Stanford University, 1967. (1972-)

ROY S. ANDERSON, Ph.D., Professor of Physics. A.B., Clark University, 1943; A.M., Dartmouth College, 1948; Ph.D., Duke University, 1951. (1960-)

KARL J.R. ARNDT, Ph.D., Professor of German. A.M., Washington University, 1928; Ph.D., The Johns Hopkins University, 1933. (1950-)

HOSSEIN G. ASKARI, Ph.D., Assistant Professor of Economics. B.S., Massachusetts Institute of Technology, 1966; Ph.D., 1970. (1973-)

LAWRENCE J. BADER, Ph.D.,Assistant Professor (Affiliate) of Education. B.A., City University, N.Y.C., 1959; M.A., 1962; Ph.D., Boston University, 1970. (1973-)

SHYAM K. BAJPAI, Ph.D., Visiting Assistant Professor of Mathematics. Ph.D., Indian Institute of Technology, 1972. (1972-)

ROBERT W. BAKER, Ph.D., Professor of Psychology, Director, Psychological Services Center. A.B., Hobart College, 1947; Ph.D., Clark University, 1953. (1954-)

GEORGE A. BALKO, JR., M.B.A., Assistant Professor of Management. M.E., Stevens Institute of Technology, 1947; M.B.A., New York University, 1952. (1956-)

RAYMOND E. BARBERA, Ph.D., Professor of Romance Languages. A.B., Brooklyn College, 1947; A.M., University of Arizona, 1948; Doctor en Letras, Universidad Nacional de Mexico, 1949; Ph.D., University of Wisconsin, 1958. (1953-)

CLAUDE W. BARLOW, Ph.D., Professor of Classics. A.B., Amherst College, 1928; A.M., Indiana University, 1930; Ph.D., Yale University, 1935. (1947-72)

PETER M. BARNETT, Ph.D., Assistant Professor in Fine Arts. M.A., Harvard University, 1965; Ph.D., 1973. (1970-)

TILTON M. BARRON, B.L.S., Librarian. A.B., Colorado College, 1937; B.L.S., Columbia University School of Library Service, 1940. (1954-)

THOMAS C. BARROW, Ph.D., Professor (Affiliate) of American History. B.A., Harvard University, 1952; M.A., 1954; Ph.D., 1961. (1967-)

JAMES F. BEARD, JR., Ph.D., Professor of English. A.B., Columbia College, 1940; A.M., Columbia University, 1941; Ph.D., Princeton University, 1949. (1955-)

ROBERT N. BECK, Ph.D., Professor of Philosophy, Philosophy Department Chairman. A.B., Clark University, 1947; A.M., Boston University, 1948; Ph.D., 1950. (1948-67; 1968-)

ARTHUR BERGERON, Ed.M., Clinical Instructor in Education. B.S., Worcester State College, 1962; Ed.M., 1966. (1971-)

THOMAS BERGSTRESSER, Ph.D., Visiting Assistant Professor of Physics. B.S., California Institute of Technology, 1960; Ph.D., University of California at Berkeley, 1966. (1973-)

JUTTA BERSTEIN, M.A., Lecturer in German. M.A., Case Western Reserve University, 1969. (1971-)

LEONARD BERRY, Ph.D., Professor of Geography. B.Sc., University of Bristol, 1951; M.Sc., 1956; Ph.D., 1969. (1969-)

ROGER BIBACE, Ph.D., Professor of Psychology, Director of Psychological Services Center. A.B., University of British Columbia, 1949; Ph.D., Clark University, 1957. (1957-)

GEORGE A. BILLIAS, Ph.D., Professor of American History. A.B., Bates College, 1948; A.M., Columbia University, 1949; Ph.D., 1958. (1962-)

CHARLES S. BLINDERMAN, Ph.D., Professor of English. A.B., New York University, 1952; A.M., 1953; Ph.D., Indiana University, 1957. (1962-)

RICHARD P. BOARDMAN, Ed.D., Assistant Professor of Educational Sociology. B.A., Dartmouth College, 1962; M.A., University of Chicago, 1963; Ed.D., Columbia University, 1968. (1970-)

DANIEL R. BORG, Ph.D., Associate Professor of European History. A.B., Gustavus Adolphus College, 1953; A.M., Yale University, 1957; Ph.D., 1963. (1961-)

MARTYN J. BOWDEN, Ph.D., Associate Professor of Geography. B.A., University of London, 1957; M.A., University of Nebraska, 1959; Ph.D., University of California, Berkeley, 1967. (1964-)

DAVID R.R. BRALEY, Ed.M., Clinical Instructor in Education. B.S., Worcester State College, 1962; Ed.M., 1967. (1971-)

DAEG S. BRENNER, Ph.D., Associate Professor of Chemistry. B.S., Rensselaer Polytechnic Institute, 1960; Ph.D., Massachusetts Institute of Technology, 1964. (1967-)

JOHN J. BRINK, Ph.D., Associate Professor of Biochemistry. B. Sc., University of Orange Free State, 1955; B.Sc. (Hons.), University of Witwatersrand, 1956; Ph.D., University of Vermont, 1962. (1966-)

DONALD M. BROVERMAN, Ph.D., Professor (Affiliate of Psychology. A.B., Union College, 1952; M.A., Clark University, 1956; Ph.D., 1958. (1964-)

NELSON M. BUTTERS, Ph.D., Affiliate Research Associate in Psychology. A.B., Boston University, 1960; M.A., Clark University, 1962; Ph.D., 1964. (1971-)

ANNE BUTTIMER, SISTER MARY ANNETTE, O.P., Ph.D., Associate Professor of Geography. B.A., National University of Ireland, 1957; M.A., 1959; Ph.D., University of Washington, 1965. (1971-)

GEORGE CAMOUGIS, Ph.D., Associate Professor (Affiliate) of Physiology. B.S., Tufts College, 1952; A.M., Harvard University, 1957; Ph.D., 1958. (1958-)

ROBERT F. CAMPBELL, Ph.D., Professor of American History. A.B., Yale University, 1939; A.M., Columbia University, 1940; Ph.D., 1947. (1946-57; 1960-)

WIILLIAM H. CARTER, JR., Ph.D., Professor of English, English Department Chairman. A.B., Middlebury College, 1936; A.M., Harvard University, 1938; Ph.D., 1951. (1949-)

THOMAS Z. CASSEL, Ph.D., Visiting Assistant Professor of Psychology. B.A., University of Miami, 1964; Ph.D., Duke University, 1971. (1972-)

GERALD R. CASTONGUAY, M.A., Assistant Professor of Music. B.Mu., Boston University, 1959; M.Mu., Hartt College of Music, 1963; M.A., Harvard University, 1965. (1970-)

ROBERT A. CIOTTONE, Ph.D., Visiting Lecturer in Psychology. B.A., Seton Hall University, 1963; M.A., University of Rochester, 1965; Ph.D., 1967. (1971-)

LEONARD E. CIRILLO, Ph.D., Associate Professor of Psychology. B.A., City College of New York, 1958; M.A., Clark University, 1962; Ph.D.,1965. (1968-)

PAUL S. CLARKSON, J.D., Curator of Special Collections. A.B., Clark University, 1925; J.D., Harvard University, 1928. (1969-)

SUSAN CLICKNER, B.Mu., Affiliate in Music. B.Mu. in Voice, Indiana University, 1955; Diploma, Curtis Institute of Music, 1959. (1970-)

MORRIS H. COHEN, Ph.D. Professor of Government. A.B., University of Chicago, 1939; Ph.D., 1950. (1947-)

SAUL B. COHEN, Ph.D., Professor of Geography, Director, School of Geography. A.B., Harvard University, 1947; A.M., 1950; Ph.D., 1955. (1965-)

GERARD T. CORCORAN, M.A., Registrar. B.A., University of Connecticut, 1957; M.A., 1961. (1966-)

RUTH CORNISH, M.S., Visiting Instructor in Mathematics. B.S., Southampton University, 1968; M.S., University of London, 1969. (1973-)

CATHERINE H. COSMAN, M.A., Lecturer in Russian. B.A., Grinnell College, 1967; M.A., Brown University, 1969. (1972-)

SAMUEL P. COWARDIN III, Ph.D., Associate Professor of Fine Arts. A.B., Harvard University, 1943; A.M., 1948; Ph.D., 1963. (1949-)

WARD J. CROMER, Ph.D., Affiliate Research Associate in Psychology. A.B., Oberlin College, 1962; M.A., Clark University, 1964; Ph.D., 1968. (1971-)

JESSIE C. CUNNINGHAM, Ph.D., Associate Professor of English. Ph.B., University of Chicago, 1948; A.M., 1952; Ph.D., University of Chicago, 1969. (1957-)

JOSEPH C. CURTIS, Ph.D., Professor of Zoology. B.A., Cornell University, 1951; Ph.D., Brown University, 1960. (1963-)

WILLIAM DAMON, Assistant Professor of Psychology.

JOHN A. DAVIES, Ph.D., Associate Professor of Physics; Department Chairman. B.S., University of Maryland, 1953; M.S., 1954; Ph.D., 1960. (1963-)

HENNIE I. DEBOECK, M.B.A., Lecturer in Business Administration. M.B.A., University of Louvain, 1968. (1970-)

TAMARA DEMBO, Ph.D., Professor of Psychology, Ph.D., University of Berlin, 1930. (1953-72)

SHANNON T. DEVOE, Ph.D., Affiliate Research Associate in Psychology. B.A., Bennington College, 1961; M.A., Clark University, 1963; Ph.D., 1969. (1971-)

JOSEPH de RIVERA, Ph.D., Associate Professor of Psychology. B.A., Yale University, 1953; Ph.D., Stanford University, 1961. (1970-)

POLLY DEWEESE, M.S., Social Work Consultant to the Psychological Service Center. A.B., Connecticut College, 1931; B.S., Simmons College, School of Social Work, 1935; M.S., Columbia University, 1948. (1969-)

MARVIN A. D'LUGO, Ph.D., Assistant Professor of Spanish. B.A., Brooklyn College, 1965; M.A., University of Illinois, 1967; Ph.D., 1969. (1972-)

THOMAS J. DOLPHIN, A.B., Director of The Evening College. A.B., Rutgers University, 1951. (1957-)

SERGE DURILIN, JR., M.A., Assistant Professor of Russian. (1970-)

JAMES P. ELLIOTT, Ph.D., Assistant Professor of English. B.A., Stanford University, 1966; Ph.D., Indiana University, 1971. (1971-)

CYNTHIA ENLOE, Ph.D., Associate Professor of Government and International Relations. B.A., Connecticut College, 1960; M.A., University of California at Berkeley, 1963; Ph.D., 1967. (1972-)

KAREN L. ERICKSON, Ph.D., Associate Professor of Chemistry. B.S., Siena Heights College, 1960; Ph.D., Purdue University, 1964. (1965-)

RACHEL FALMAGNE, Associate Professor of Psychology. License in Physiological Sciences, University of Brussels, 1961; Doctorate in Physiological Sciences, 1967.

STEPHEN L. FELDMAN, Post Doctoral Fellow (Spring Semester). A.B., Rutgers University, 1968; M.A., Johns Hopkins University, 1971. (1973-)

RONA M. FIELDS, Ph.D., Associate Professor of Sociology. B.A., Lake Forest College, 1953; M.A., Loyola University of Chicago, 1964; Ph.D., University of Southern California, 1970. (1972-)

DAVID FINKEL, Ph.D., Affiliate in Clinical Training. A.B., Boston University, 1961; M.S., University of Massachusetts, 1967; Ph.D., 1969. (1971-)

RICHARD B. FORD, Ph.D., Associate Professor of Comparative History. B.A., Denison University, 1957; M.A.T., Yale University, 1959; Ph.D., University of Denver, 1966. (1968-)

RONALD P. FORMISANO, Ph.D., Associate Professor of American History. B.A., Brown University, 1960; M.A., University of Wisconsin, 1962; Ph.D., Wayne State University, 1966. (1973-)

EVELYN FULLER, M.Mu., Affiliate in Piano. B.Mu., Oberlin Conservatory of Music, 1953; M.Mu., 1954. (1967-)

WESLEY M. FULLER, M.Mu., Associate Professor of Music. B.Mu., Oberlin Conservatory of Music, 1953; M.Mu., Boston University, 1958. (1963-)

GEORGE E. GARDNER, M.D., Visiting Lecturer in Psychology. A.B., Dartmouth College, 1925; Ed.M., Harvard University, 1926; Ph.D., 1930; M.D., 1937. (1971-)

SIDNEY GARRISON, Ph.D., Assistant Professor of Mathematics. B.S., Vanderbilt University, 1967; Ph.D., University of Wisconsin, 1973. (1973-)

STANFORD N. GERBER, Ph.D., Associate Professor of Social Anthropology and Sociology. B.A., University of Kansas City, 1955; M.A., 1957; Ph.D., University of Missouri, 1966. (1968-)

LAWRENCE GOLDBERG, Ph.D., Assistant Professor of Management. B.A., Brooklyn College, 1967; Ph.D., Brown University, 1972. (1972-)

EMANUEL S. GOLDSMITH, Ph.D., Visiting Assistant Professor of Jewish Literature. B.A., CCNY, 1956; Ph.D., Brandeis University, 1972. (1971-)

RAYMOND GOLOSKIE, Ph.D., B.S., Brown University, 1953; M.A., Harvard University, 1955; Ph.D., Harvard University, 1961. (1973-)

HAROLD GOODGLASS, Ph.D., Professor (Affiliate) of Psychology. A.B., College of the City of New York, 1939; A.M., New York University, 1948; Ph.D., University of Cincinnati, 1951. (1956-)

ALLAN E. GOODMAN, Ph.D., Associate Professor of Government and International Relations, Government and International Relations Department Chairman. S.B., Northwestern University, 1966; M.P.A., Harvard University, 1968; Ph.D., 1971. (1970-)

ALBERT M. GOTTLIEB, Ph.D., Assistant Professor of Physics. B.S., Stevens Institute of Technology, 1965; M.S., Brandeis University, 1967; Ph.D., 1970. (1973-)

HARVEY A. GOULD, Ph.D., Associate Professor of Physics. B.A., University of California, Berkeley, 1960; Ph.D., 1966. (1971-)

ROCHELEAU Z. GRANGER, JR., A.M. in Ed., Director of Physical Education for Men. A.B., Clark University, 1938; A.M. in Ed., 1939. (1942-)

SANTE GRAZIANI, M.F.A., Associate Professer (Affiliate) of Fine Arts. B.F.A., Yale University, 1942; M.F.A., 1948. (1958-)

ALAN F. GUMMERSON, Ph.D., Assistant Professor of Economics. B.A., Grinnell College, 1965; Ph.D., University of Wisconsin, 1972. (1969-)

ALAN E. GUSKIN, Ph.D., Acting President, Professor of Education and Sociology. B.A., Brooklyn College, 1958; Ph.D., University of Michigan, 1968. (1972-)

JUDITH T. GUSKIN, Ph.D., Assistant Professor of Education. B.A., Brooklyn College, 1959; M.A., University of Michigan, 1961; Ph.D., 1970. (1972-)

MARCEL GUT, Ph.D., Professor (Affiliate) of Chemistry. Ph.D., University of Basel, 1947. (1972-)

IAN D.K. HALKERSTON, Ph.D., Professor (Affiliate) of Endocrinology. B.Sc., University of Reading, England, 1941; Ph.D., Boston University, 1960. (1967-)

JUDITH P. HALLETT, Ph.D., Visiting Assistant Professor of Classics. B.A., Wellesley College, 1966; A.M., Harvard University, 1967; Ph.D., 1971. (1972-)

TAMARA K. HAREVEN, Ph.D., Associate Professor of American History. B.A., Hebrew University, Jerusalem, 1960; M.A., University of Cincinnati, 1962; Ph.D., Ohio State University, 1965. (1969-)

SERENA S. HILSINGER, Ph.D., Associate Professor of English. A.B., Douglass College, 1959; Ph.D., University of Connecticut, 1964. (1962-)

ANTHONY M. HODGKINSON, Associate Professor of Film Studies and Associate Chairman of Film Studies Program in the Department of Visual and Performing Arts. Gaddesden College, England. (1972-)

CHRISTOPHER HOHENEMSER, Ph.D., Associate Professor of Physics. B.A., Swarthmore College, 1958; Ph.D., Washington University (St. Louis), 1963. (1971-)

ROBERT HOLLINGER, Ph.D., Visiting Assistant Professor of Philosophy. B.A., Brooklyn College, 1966; Ph.D., University of Wisconsin at Michigan, 1972. (1972-)

PIERRE L. HORN, M.A., Assistant Professor of Romance Languages. B.A., Brooklyn College, 1964; M.A., Columbia University, 1965. (1969-)

RICHARD A. HOWARD, Ph.D., Assistant Professor of Geography and Adjunct Professor of Biology. B.S., Iowa State University, 1962; M.S., University of California, 1965; Ph.D., University of Massachusetts, 1970. (1968-)

ROBERT C. HSU, Ph.D., Assistant Professor of Economics. B.A., National Taiwan University, 1960; M.A., Atlanta University, 1963; Ph.D., University of California, 1970. (1971-)

KENNETH HUGHES, Ph.D., Assistant Professor of German. B.A., Rutgers University, 1962; Ph.D., 1967.

ROBERT M. HYDE, A.M., Executive Vice President. A.B., Rutgers University, 1947; A.M., University of Pennsylvania, 1949. (1954-)

PAUL T. INGLEFIELD, Ph.D., Assistant Professor of Chemistry. B.S., University of Glasgow, 1962; Ph.D., University of British Columbia, 1966. (1967-)

HARRY L. JACOBS, Ph.D., Professor (Affiliate) of Physiology. B.A., University of Delaware, 1950; M.A., 1951; Ph.D., Cornell University, 1955. (1967-)

H. WILLIAM JOHANSEN, Ph.D., Associate Professor of Botany. B.A., San Jose State College, 1955; M.A., San Francisco State College, 1961; Ph.D., University of California, Berkeley, 1966. (1968-)

HARTMUT M. KAISER, Ph.D., Assistant Professor of German. Ph.D., Brown University, 1968. (1971-)

DONALD D. KANE, M.A., Adjunct Associate Professor of Management, Associate Chairman, Department of Management. B.S., Long Island University, 1952; M.A., Columbia University, 1959. (1971-)

BERNARD KAPLAN, Ph.D., Professor of Psychology. A.B., Brooklyn College, 1948; A.M., Clark University, 1950; Ph.D., 1953. (1953-)

GERALD J. KARASKA, Ph.D., Professor of Geography. B.S., Pennsylvania State University, 1954; M.A., George Washington University, 1957; Ph.D., Pennsylvania State University, 1962. (1969-)

ROGER E. KASPERSON, Ph.D., Associate Professor of Government and Geography; Dean of the College. A.B., Clark University, 1959; M.A., University of Chicago, 1961; Ph.D., 1966. (1968-)

ROBERT W. KATES, Ph.D., Professor of Geography. A.M., University of Chicago, 1960; Ph.D., 1962. (1962-)

THOMAS H. KEIL, Ph.D., Associate Professor (Affiliate) of Physics. B.S., Caltech, 1961; Ph.D., University of Rochester, 1965. (1973-)

HELEN J. KENNEY, Ed.D., Professor of Education. A.B., Emmanuel College, 1944; M.Ed., Boston College, 1953; Ed.D., Boston University, 1959. (1968-)

JOHN F. KENNISON, Ph.D., Professor of Mathematics, Mathematics Department Chairman. B.S., Queens College, 1959; A.M., Harvard University, 1960; Ph.D., 1963. (1963-)

ROBERT W. KILMOYER, JR., Ph.D., Associate Professor of Mathematics. B.A., Lebanon Valley College, 1961; Ph.D., Massachusetts Institute of Technology, 1969. (1966-)

DANIEL R. KILTY, Ph.D., Lecturer in Management. B.A., St. Anselm's College, 1954; M.A., University of Pennsylvania, 1958; Ph.D., Indiana University, 1965. (1969-)

J. FANNIN KING, M.A., Associate Professor of Romance Languages, Advisor to International Students. A.B., Pomona College, 1936; A.M., Harvard University, 1937. (1946-)

ARTHUR F. KINNERY, Ph.D., Affiliate Associate Professor of English. B.A., Syracuse University, 1955; M.S., Columbia University, 1956; Ph.D., University of Michigan, 1963. (1971-)

JOSEPH KLEIN, D.D., Lecturer in Biblical Literature. B.A., Ohio State University, 1933; Rabbi and M.H.L., Hebrew Union College, Cincinnati, 1939; D.D., Hebrew Union College, New York City, 1963. (1969-)

DUANE S. KNOS, Ph.D., Professor of Geography. B.A., Upper Iowa College, 1947; M.A., University of Iowa, 1953; Ph.D., 1956. (1970-)

WILLIAM A. KOELSCH, Ph.D., Associate Professor of American History and Geography, University Archivist. Sc.B., Bucknell University, 1955; A.M., Clark University, 1959; Ph.D., University of Chicago, 1966. (1963; 1967-)

BARBARA C. KOHIN, Ph.D., Clinical Instructor in Elementary Education. B.A., College of William and Mary, 1953; M.S., University of Maryland, 1957; Ph.D., 1960. (1967-69; 1971-)

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* Non-Trustee Member

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ACADEMIC CALENDAR 1973-1974*

1973

FALL SEMESTER
MODULES I AND II

Monday, September 3
Labor Day

Wednesday, September 5 - Friday, September 7
New student registration and orientation

Saturday, September 8
Continuing and Readmitted Students Registration

Monday, September 10
Classes Begin

Monday, October 1
Last day to submit applications to the Registrar for degrees which will be awarded on January 18, 1974.

Monday, November 12 - Friday, November 16
Advance registration for Modules III and IV (Course adjustments may be made on Saturday, January 19, 1974).

Friday, November 16
Thanksgiving vacation starts at end of classes

Monday, November 26
Classes resume at 8:30 a.m.

Friday, December 14
No classes

Saturday December 15 - Thursday, December 20
Fall Semester examinations

Friday, December 21 - Sunday, January 6
Christmas vacation

1974

MODULE III

Wednesday, January 2
All fall grades due at the Registrar's Office

Monday, January 7 - Friday, January 18
Intermodular reading period

Friday, January 18
New and Readmitted Students Registration

Saturday, January 19
Course adjustment day for advance registrants

Monday, January 21
Classes begin for Modules III-IV and III

Monday, February 11 - Friday, February 15
Advance registration for Module V

Wednesday, March 6
Last day to submit application to the Registrar for degrees which will be awarded on Commencement Day, May 19, 1974.

Thursday, March 7
Classes end for Module III

Friday, March 8
Module III final examinations begin; Spring vacation starts for students with courses continuing into Module IV.

MODULE IV

Monday, March 18
Classes begin for Module IV; resume for Modules III-IV; final grades due for Module III courses.

Monday, April 15 - Friday, April 19
Advance registration for Modules I and II, 1974-75

Monday, April 22
Theses and dissertations due for May candidates for advanced degrees.

Friday, May 3
No classes

Saturday, May 4 - Thursday, May 9
Final exams for Modules III-IV and Module IV

MODULE V

Monday, May 13
Classes begin for Module V; course adjustments made for advance registrants.

Sunday, May 19
Commencement

Monday, June 3
Last day to submit applications to Registrar for degrees which will be awarded in August.

Wednesday, June 26
Last day of classes for Module V

Thursday, June 27 - Saturday, June 29
Final examinations for Module V

*Note: this is a transitional calendar composed of a fall semester followed by 3 seven-week modules.

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Additional Information

Persons interested in more information about Clark University should address the appropriate officer of administration listed below:

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Faculty Affairs:	Dr. Saul B. Cohen Chairman of the Faculty
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Clark University Bulletin

The New England Association of Colleges and Secondary Schools accredits schools and colleges in the six New England states. Membership in one of the six regional accrediting associations in the United States indicates that the school or college has been carefully evaluated and found to meet standards agreed upon by qualified educators. Colleges support the efforts of public school and community officials to have their secondary school meet the standards of membership.

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CLARK UNIVERSITY

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THE UNDERGRADUATE COLLEGE

THE UNIVERSITY COLLEGE

The role of Clark University in undergraduate education is defined by its position as a small college dedicated to advanced learning within the context of the University. The University's emphasis upon intellectual and scholarly achievement and the extensive resources of its nationally recognized Graduate School provide unique advantages for the College. The University College concept seeks to integrate graduate and undergraduate education and to translate the high standards of the Graduate School for the University as a whole. The ultimate goal of the University College is to produce an autonomous learner. Programs are structured in such a way that the student will take increasing responsibility for his or her own learning.

In the spring of 1973, the University adopted the concept of the University College as the ideal toward which all undergraduate academic planning and program development should be directed. The college embraces the normal four undergraduate years and results in the B.A. degree or, if the student chooses and is accepted into an integrated undergraduate-graduate program, an M.A. degree. The University College is composed of two major programs—the *Introductory Program* and the *Program of Advanced Studies.*

INTRODUCTORY PROGRAM

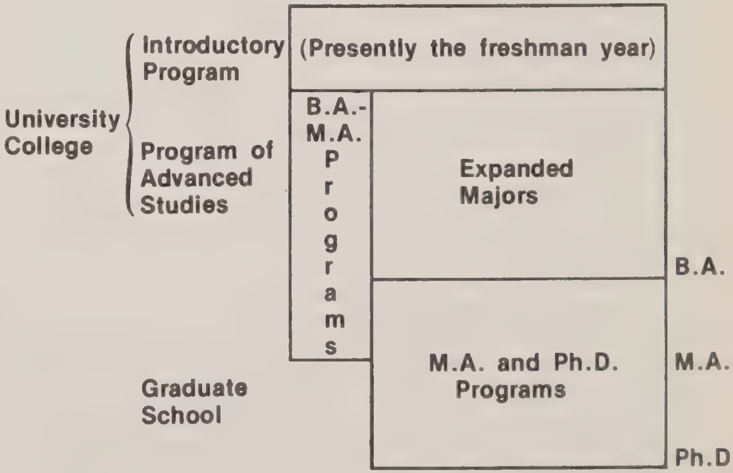
The *Introductory Program* when fully developed will replace the current freshman curriculum. A faculty-student planning committee has been established to develop proposals for the program. The committee is considering such issues as the need for introductory courses to the various departmental and interdepartmental programs, the different backgrounds and needs of individual students, courses which bridge disciplinary perspectives, academic acceleration into the Program of Advanced Studies, the development of specific skills, advisory systems, and means for defining career and educational objectives.

PROGRAM OF ADVANCED STUDIES

The *Program of Advanced Studies* leads to either the B.A. or M.A. degree and is composed of two major tracks. The *expanded major* involves study in the various departmental and interdepartmental programs of the College and results in the B.A. degree. The expanded major is not a departmental major in the traditional sense. Rather, it is a program of study which is anchored in a particular discipline but specifically builds in courses in related disciplines as an integral part of the major. Each major, therefore, becomes interdisciplinary in design. Ordinarily, multiple tracks within the major will be provided. A student will take from 50 to 80 per cent of his or her studies during the Program of Advanced Studies in the expanded major. This greater focus over the last three years will permit greater depth and sophistication in the student's chosen field of study.

Integrated *undergraduate-graduate programs* constitute the second track of the Program of Advanced Studies and lead to the M.A. degree. Enrollment in these programs is limited and requires formal admission. This ordinarily occurs at the end of the first year in the Program of Advanced Studies. These programs tend to be interdisciplinary in nature and have a strong career orientation. Over time, a network of such programs will become available to students in the University College

The structure of the University College may be expressed graphically as follows:



THE ACADEMIC PROGRAMS

DEPARTMENTAL MAJORS

Within the Program of Advanced Studies, a student may major in biology, chemistry, economics, English, Foreign Languages (the Foreign Languages major is designated: in French, in German, in Spanish, in Romance Languages, or in Foreign Languages according to the program chosen), geography, government, history, international relations, mathematics, music, philosophy, physics, psychology, or sociology. A new interdepartmental major in technology and man is also available. A major in fine arts is offered through a cooperative program with the School of the Worcester Art Museum and the Craft Center. A major in theatre art is offered through a coordinate program sponsored by Clark University, Holy Cross College, and Assumption College. Courses in black studies, classics, geology, Jewish studies, Russian, and women's studies are offered, but departmental majors are not available.

INTEGRATED GRADUATE-UNDERGRADUATE PROGRAMS

The University recently inaugurated several new integrated undergraduate-graduate programs. These programs ordinarily begin during the junior year, continue for a period of approximately three years, and result in an M.A. degree. Clark undergraduate students and transfer students both are eligible for these programs and must apply for admission to them. Formal application to the Graduate School is required after a given period in the program. The newly approved programs are comparative literature, environmental affairs, and international development.

STUDENT-DESIGNED MAJORS

Any student can design his or her own major which focuses on a systematic body of knowledge not within the bounds of existing majors or departments. The student, with the advice of an advisory committee of three faculty members, will establish the major program which must then be approved by the Undergraduate Academic Board. Such majors must include a balance between upper and lower division courses and must be approved no later than the start of the second semester of the junior year. The senior year includes the satisfactory completion of some specific work (*e.g.*, senior thesis, an internship experience, senior tutorial) intended to integrate courses in the major and to demonstrate accomplishment.

DECLARATION OF THE MAJOR

The central role of the expanded major in the B.A. degree attaches considerable importance to the declaration of the major. A student declares his or her intent to major in one or several departments upon entering the Program of Advanced Studies. By the end of the first year in this Program, the student should make a firm declaration of major. Changes in major after this point are possible but may prolong the undergraduate experience. Students are encouraged to seek faculty advice and give careful attention to their future program of study during the Introductory Program.

UNDERGRADUATE PROGRAMS

Freshmen and sophomores may choose any course designated by the department as open to them.

Freshmen and sophomores are admitted to courses designated by numbers beginning with the numeral 2 only with permission of the instructor and the department chairperson concerned, to whom the student must present evidence of high class standing and/or adequate preparation.

Juniors and seniors may elect any courses designated by numbers beginning with 1 or 2, indicating respectively courses which are primarily for undergraduates or for advanced undergraduates and graduate students. The selection by juniors and seniors of these courses is subject to any conditions stated in the course description.

Undergraduates may be admitted to courses designated by numbers beginning with the numeral 3 (indicating courses which are primarily for graduate students) with the approval of the Dean of the Graduate School.

DIRECTED READINGS AND SPECIAL PROJECTS COURSES

Most departments offer directed readings or special projects courses which may be entered with the permission of the instructor concerned. Directed readings courses comprise a sequence of structured readings on a given topic approved and directly supervised by the instructor. Special projects courses involve independent research by the student on a particular problem, as in laboratory work or field study. Both types of courses are offered for variable course credit but not to exceed a full course except by petition to the College Board. The number of course credits awarded on the basis of work performed is determined at the end of the course. Students may take up to two full course credits in Directed Readings, Special Projects or some combination of the two in a given two-module period. There is no limit on the total number of such courses which may be counted toward the B.A. degree.

THE MODULAR CALENDAR

Clark University has adopted an academic calendar composed of five seven-week terms beginning in September and ending in June. The normal academic year for the student involves attendance at four of these five terms, usually Modules I-IV (September-May). Module V may be substituted for one of the first four modules should the student wish to be away for one of these terms, but the impact of such a change on the student's program should be carefully assessed.

For dates, see the Academic Calendar at the back of this catalogue.

THE FIFTH MODULE

The fifth module is an extension of the normal academic year at Clark University. Registration is optional and open to all Clark students as well as to qualified non-Clark students. This seven-week module provides a wide selection of normal departmental and interdepartmental course offerings supplemented by a number of special programs and academic opportunities unavailable during the other four modules.

It is possible, for example, to take a full year of a foreign language in this seven-week term. International field study and internship opportunities are also available.

The faculty is composed of the resident Clark faculty and invited visiting lecturers from other institutions and the Worcester community. A variety of recreational and extra-curricular activities are also an integral part of the program.

Clark students may substitute the fifth module for any one of the first four modules, or they may accelerate their academic program by taking courses in the fifth module as an overload. Clark students who have registered for four full courses throughout Modules I-IV may receive a 20% reduction on tuition for Module V. In addition, Clark University dorm students may receive free dormitory accomodations during the fifth module, while Clark off-campus students may receive a reduced rate for dormitory space during the fifth module.

A catalog listing course offerings for the fifth module is available in the spring.

WORCESTER CONSORTIUM COURSES

Since Clark is a member of the Worcester Consortium for Higher Education, students may enroll for one course each module at Anna Maria College, Assumption College, Holy Cross College, Worcester Polytechnic Institute, Worcester State College, University of Massachusetts Medical School, and Becker, Leicester, Quinsigamond and Worcester Junior Colleges. Courses at these institutions should not duplicate those taught at Clark and require the approval of the department chairperson or, where necessary, the Associate Dean of the College. Students enrolled in the day college may not enroll independently at other Consortium institutions and receive Clark credit.

NON-TRADITIONAL EXPERIENCES

Academic experiences outside the normal curriculum (*e.g.*, internship experiences, off-campus research, study at non-accredited institutions) are eligible for course credit. To qualify, an experience must involve an extension, embodiment, or illustration in some significant way of previous or concurrent systematic academic work. It must also take place under competent supervision and the learning involved must be formally evaluated by a Clark faculty member. The goals and structure of the experience must be agreed to by the instructor and the student *prior* to the beginning of the experience. Course credit will not be given for work that duplicates previous course work or other prior educational experiences. Students seeking information on this topic should contact the Associate Dean of the College.

ACADEMIC ACCELERATION

The University encourages academic acceleration for qualified undergraduate students. A student may earn the bachelor's degree in less than four academic years through a combination of Advanced Placement credit, overload course work, attendance in a fifth module during the normal academic year, and participation in Summer Schools. No student may, except with the permission of the College Board, take overload work in his or her first two modules in residence unless the overload is the result of co-recommended or co-required one-quarter or one-half courses (*e.g.*, some science laboratory courses). Students may, after the first two modules in residence, take up to four and one-half courses over a two-module period. Academically qualified students (defined as three out of four courses with a B+ or better, and no D's, in all courses taken during the previous two modules) may, with the signature of the student's advisor or department chairperson, be eligible for further overload course work.

NORMAL PROGRAMS

The undergraduate normally carries a full program of four one-half courses in a given module. In general, a course meets three times weekly for a two-module period. Laboratory periods are usually three hours long. Students should consult their faculty advisor or major department when questions of course or program selection arise.

PARTIAL PROGRAMS

Under special circumstances, students may be permitted by the Deans of Students to register for a two-module program of less than three courses. Such students are designated as part-time students.

ORIENTATION

Freshmen and transfer students attend an orientation program held on the campus for several days before the academic year begins. The intent of this program is to assist students in registering for a program of studies and to familiarize them with the Clark and Worcester communities. Placement examinations will be given and opportunities will be provided for students to attend individual and group meetings with faculty and other students.

ACADEMIC ADVISING

At orientation and during the first year, new students are provided the opportunity to meet in groups and individually with faculty members in order to obtain advice regarding course program and related matters. Each student is encouraged to request a faculty advisor. Toward the end of their freshman year, students are asked to indicate their preference for advisor from the major department, and advising responsibility at that point is assumed primarily by the various academic departments.

ADVANCED PLACEMENT

Placement in advanced courses is determined by individual performance on special departmental placement examinations or, in some instances, on the Advanced Placement and Achievement Tests of the College Entrance Examination Board. Two course credits for certain courses completed in high school will be granted toward the bachelor's degree if a student has received a 4 or 5 on a College Entrance Examination Board Advanced Placement test. Students who received a 3 on an Advanced Placement test may be granted some amount of credit only at the discretion of the appropriate academic department.

REGISTRATION

Every student registers for a specific number of courses at the start of Modules I-II and Modules III-IV. A special registration will be held for Module V. Notification of the dates registration occurs is given in advance; failure to register within the announced period occasions a late registration fee. Students are strongly urged to register at advance registration.

STUDY ABROAD

All students are encouraged to integrate study abroad programs into their course of studies at Clark. Through the University's affiliation with the Institute of European Studies, campuses in Vienna, Freiburg, Paris, Nantes, Madrid and Durham are readily accessible to Clark students. For further information and to explore the possibilities of a study abroad program for a summer, one semester or an entire year, contact Mr. Schatzberg, Department of Foreign Languages and Literatures.

A foreign study listing is available in the Career Planning and Placement Office. Programs for study abroad must be approved by the College Board.

JEWISH STUDIES PROGRAM

Courses in Jewish Studies are offered at Clark as interdepartmental disciplines and within various departments including the Department of Foreign Languages and Literatures, Department of History and School of Geography. Independent nondepartmental courses are also offered and several courses are offered through the Yeshiva Day Academy of Worcester County. Courses included in the Program are listed under *Jewish Studies* in the catalogue.

HEBREW UNIVERSITY PROGRAM

In 1973, Clark inaugurated a special year abroad program with Hebrew University in Jerusalem. The program includes a seminar or directed study, field research, and training experience. Students enrolling in the program will be required to take the elementary or intermediate Hebrew courses offered at Clark University as part of their program. Clark has also arranged for a faculty member of Hebrew University to serve as a coordinator for the Clark program. Interested students should contact members of the Jewish Studies Committee for further information.

WASHINGTON SEMESTER PROGRAM

Clark participates in the Washington Semester program of the American University in Washington, D.C. Under the program, a small number of superior students may be nominated to attend the program, usually in the junior year, studying United States government in the nation's capital. Although any student may be interested in the program, the opportunity should be particularly attractive to students majoring in government, international relations, history, economics or sociology. A credit of four courses is given for the program toward the bachelor's degree at Clark. Inquiry and application should be made to the chairman of the Department of Government-International Relations.

SUMMER SCHOOL COURSES OTHER THAN CLARK'S

Credit toward a degree for study at a summer school other than the Clark Summer School must be approved by the Registrar no later than registration day of the following semester. Students are strongly advised to confer with the Registrar prior to taking summer school courses to assure acceptability of credit toward the Clark degree.

GUEST AND SPECIAL STUDENTS

The University provides for guest students from other colleges and universities who wish to study at Clark for one or two semesters and for special students who wish to take only a few courses without enrolling as degree candidates. Persons interested should contact the Registrar's Office.

NON-CREDIT AUDIT STATUS

Persons not enrolled as full-time Clark students who wish to audit courses on a non-credit basis are invited to do so. Approval of the instructor of the course is required. In limited-enrollment or sectioned courses, regularly enrolled Clark students are given preference for available openings. Registration is arranged through the Registrar's Office. A fee of $152 per course will be charged.

NOTE: Records for non-matriculating auditors are kept for only the semester in attendance. Transcripts are not issued at the conclusion of the course, nor at a later date.

REQUIREMENTS FOR A BACHELOR'S DEGREE

GENERAL REQUIREMENTS

Course requirements: Credit toward the Bachelor of Arts degree is expressed in terms of courses. A course, normally two modules in duration, involves three class meetings of 50 minutes each and three to four hours of laboratory, where appropriate, per week. A course may also be offered at double-strength intensity over a one-module period.

Minimal academic performance: To graduate with the B.A. degree, a student must receive passing grades in the 32 full courses required for graduation; he or she must receive a C- or better in at least 24 of these courses. Equivalencies for students with fewer than 32 courses in residence will be established by the College Board.

For the purpose of transfer, a full course is equivalent to four semester hours credit.

RESIDENCE

Normally at least one-half of the total number of courses required for a bachelor's degree, as well as at least one-half of the total number of courses taken for the fulfillment of the major, must be taken at Clark University. Of these, eight of the last 16 courses must be completed at Clark.

TOTAL COURSE REQUIREMENTS

Successful completion of a total of 32 full courses is required for the bachelor's degree.

GROUPS

Courses may be obtained at the undergraduate level in the following fields of instruction which, for administrative purposes, are known as "groups."

Group A. Science and Mathematics: Biology, chemistry, experimental psychology, mathematics and physics.

Group B. Social Sciences: Economics, education, geography, government, history, international relations, linguistics, philosophy, psychology and sociology.

Group C. Language and Literature: English, classics, comparative literature, French, German, Hebrew, Italian, Russian and Spanish.

Group D. Fine Arts: Art, music, theatre art and film.

MAJOR REQUIREMENTS

Major: A departmental major consists of from 12 to 19 courses chosen from those designated by the department in the Program of Advanced Studies. No department may require a student to take more than 19 courses in the expanded major, but a student may take more than 19 courses if he or she meets the other requirements for graduation.

ACADEMIC REGULATIONS

GRADES

Reports on the work of each student are made at the end of each course. At the time of final registration each undergraduate student must elect one of two reporting patterns for each of his or her courses, unless the option has been explicitly restricted for that course. First, the student may elect to receive an A, B, or C grade, with the modifying symbols plus and minus, or D, or No Record. Second, he or she may elect to receive the letter P (indicating successful completion of the course at C- or better) or No Record. If the grading option is restricted by the instructor, the student may receive a Cr (indicating successful completion of the course at C- or better) or No Record. No Records do not appear on the student's permanent record.

The faculty accepts the following qualitative description of grades:

In reference to the Clark student body as a whole over the long run,

A indicates work of distinction, of exceptionally high quality;
B indicates good work, but not of distinction;
C indicates satisfactory work;
D indicates marginal work;
NR indicates unacceptable work.

INCOMPLETES

A record of Incomplete may be permitted by approval of the College Board or Deans of Students only when sickness or some other unavoidable circumstance prevents completion of the course. A record of Incomplete incurred in Modules I-II must be made up no later than the following April 1; if incurred in Modules III, IV, V, or summer term, it must be made up no later than the following October 1. If a course is not completed within the specified time, the record of Incomplete is changed to one of No Record.

CUMULATIVE SUMMATION OF GRADES

A yearly cumulative summation of the number of grades received in each grade category, compared with the institutional distribution of the grades, will appear on each student's transcript. There will be no calculation of a student's Grade Point Average.

ELECTION OF THE PASS OPTION

The availability of the Pass option in virtually all courses is designed to help minimize the competitive aspects of grading for those who find competition harmful to learning. Some students may wish to elect a number of their courses on this basis.

All students should remember that the great majority of graduate and professional schools *have expressed a preference for graded transcripts and encourage applicants to have many graded courses.* Pre-professional students and those for whom graduate school is a goal should exercise caution in employing the Pass option. Similarly students who have interest in the attainment of honors such as Phi Beta Kappa and general course honors at graduation should exercise the Pass option cautiously.

RESTRICTION OF OPTION

A department may, with the approval of the Undergraduate Academic Board, restrict the grading option for its majors in the major program. An individual faculty member may, with the approval of the Undergraduate Academic Board, offer a course on a Cr/NR basis.

REPORTING GRADES TO OUTSIDE SOURCES

Unless a student indicates in writing to the Dean of Students that he or she wishes it not to be done in his or her case, information concerning academic performance will be released upon request to high schools attended by the student and to scholarship sources.

WITHDRAWAL FROM COURSES

A student may withdraw from any course at any time during the first four weeks of classes, regardless of the grade thus far attained in that course, providing that, after withdrawal, he or she is carrying no fewer than three courses.

COURSE CHANGES

A student may enter a course without special permission, unless such permission is required, any time up to final registration at the end of the first week of classes. After the first week, a student may enter a course with the permission of the instructor up to two weeks after the beginning of classes in a single-module course, and up to four weeks after the beginning of classes in a two-module length course. Thereafter, a student may enter a course only with the permission of the instructor and the College Board.

CLASSIFICATION OF STUDENTS

All students who have not been required to withdraw at the end of two given modules will be promoted if they have satisfactorily completed the following number of courses:

To the sophomore class	6 courses
To the junior class	14 courses
To the senior class	22 courses

PROBATION

A student whose accumulated courses at the end of two modules are less than three (or less than two and one-half in the case of a freshman) will be reminded by the Dean that he or she is in jeopardy of being required to withdraw.

DISMISSAL

A student may be required to withdraw from the College by failing to complete successfully the following number of courses in a four-module sequence:

Introductory Program (freshman)	5 courses
Program of Advanced Studies	6 courses

PLAGIARISM

In order to insure academic integrity and to safeguard students' rights, all cases of plagiarism should be reported to the College Board. Such reports of plagiarism should be carefully documented, and the student accused of the infraction notified of the charge. Students found guilty of plagiarism are liable to suspension.

EXAMINATIONS

Final examinations are given at the end of each course in many College courses. Approximately one week is set aside for each examination period and an attempt is made to distribute the examinations for any individual student throughout this period. Absence from a final examination, except for the most compelling reasons, may result in a No Record in the course. Other examinations and tests may be given at any time during the course at the convenience of the instructor.

CLASS ATTENDANCE

The College has no class attendance requirements. However, instructors have the prerogative of establishing such requirements for their own courses.

LEAVES OF ABSENCE

A student who is in good standing may apply to the Deans of Students for a leave of absence, after which he or she may return to the University without formal application for readmission.

HONORS AND AWARDS

DEPARTMENTAL HONORS

A student may elect a program leading to a bachelor's degree with honors in a particular subject at the beginning of the junior year and, in some cases, at the beginning of the senior year. Under this plan, the department appoints an honors advisor who assists the student in planning a unified program of courses for the junior and/or senior years. The program may include a maximum of six courses in which the student works with a large measure of independence under the supervision of the advisor. In the senior year, the student must pass a comprehensive examination given by the department.

Students may apply in writing to their major department for permission to take honors work, not later than May 1 of the sophomore year or, in some departments, in the junior year. Department approval is necessary for admission to such work. In exceptional cases and in certain departments, application may be made and admission approved by the department concerned as late as the first two weeks of the senior year but only with consent of the College Board.

Admission to an honors program does not relieve the student from any of the standing regulations. A student's candidacy for honors will be terminated at the end of any module in which he or she has not maintained a standard satisfactory to the department in which he is doing honors work. If candidacy is terminated for any reason, the amount of course credit to be allowed for honors courses will be determined by the College Board in consultation with the major department.

The department may recommend the student's graduation with honors, high honors or highest honors, the recommendation to occur at the conclusion of the honors program.

GENERAL HONORS

General Course Honors are determined by the College Board on the basis of 16 modules' work or its equivalent. Criteria such as grades, percentage of courses taken on P/NR and graded basis, and number of courses at Clark are used for determining the awarding of General Honors. Ordinarily 3/4 of a student's record at Clark must be graded if he or she is to be eligible for General Honors.

PHI BETA KAPPA

The Society of Phi Beta Kappa, founded at the College of William and Mary in 1776, is dedicated to the recognition and encouragement of outstanding scholarly achievement in liberal studies. The Clark Chapter, Lambda of Massachusetts, was established in 1953. Each year, a limited number of juniors and seniors are elected to membership on the basis of distinction in programs which are clearly liberal in character, with due consideration of evidence, both formal and informal, of high scholarship and creativity.

TUITION AND OTHER CHARGES

GENERAL INFORMATION

Undergraduate tuition, fees and other charges for 1974-75 are listed below. Charges for the Evening College and the Summer School can be found in their respective catalogs. Tuition, fees and other charges for graduate students are listed under the catalog section on The Graduate School.

Tuition, board, dormitory charges and certain fees are due and payable prior to the beginning of each semester. (These dates for 1974-75 are August 15 for the first semester (Modules I/II) and January 1 for the second semester (Modules III/IV). No one is permitted to register for any semester until all financial obligations have been satisfactorily arranged with the University. A penalty fee is levied for late registration and late payment of charges.

TUITION

Tuition for Module I and II, and III and IV is based on a normal program of 4 full courses. Students who enroll for less than a normal program are charged at a rate of $388.00 per course. Excess credit over 4 full courses will be charged at $388.00 per course.

Part-time students also are charged at the rate of $388.00 per course.

ORIENTATION FEE

$30.00 is assessed for all new students to cover food and other related costs during orientation.

CONSOLIDATED FEE

Beginning in 1968, the University merged a large number of special fees formerly charged separately for laboratories, matriculation, graduation, etc. into a single uniform consolidated fee of $25.00 a semester. This fee is charged to all matriculated students regardless of the number of semester hours.

REFUND

Withdrawals are arranged in the Dean of Students Office. A student who officially withdraws in writing during the first week of any semester is allowed a refund of 80 percent on tuition; during the second week, 60 percent; during the third week 40 percent; during the fourth week, 20 percent; after the fourth week there is no refund. The Consolidated Fee and Activities Fee are refunded by the same formula. There is no refund on other charges, except board, when a student withdraws from the University.

When a student has left, but not withdrawn from the University on the advice of a doctor within the first four weeks of a semester, and a decision is made later that the student must withdraw, tuition refund is made retroactive to the date of the doctor's recommendation, based on the schedule described above. A detailed statement of the refund policy may be obtained in the General Office.

CONTINGENCY DEPOSIT

All undergraduates are required to pay a $25.00 deposit to cover minor charges, such as property damage, which may be incurred during the year. They are billed each year for whatever charges are incurred; the balance is refunded upon completion of their studies.

DORMITORY DEPOSIT

A dormitory deposit of $25.00 is required each spring of upperclassmen to reserve a place in a dormitory. It is credited toward the dormitory charges. The deposit is forfeited if the student does not enroll for the specified semester.

STUDENT ACTIVITY FEE

A fee of $37.50 per semester, levied and administered by the Student Council, is required of all matriculated undergraduates. It pays for admission to and participation in a wide range of cultural and recreational activities.

APPLICATION FEE

A fee of $15.00 must accompany the application for admission to the College. It is not refundable.

ADMISSION DEPOSIT

A deposit of $100.00 is required of applicants when they accept the University's offer of admission. It is credited towards charges for the first semester. The deposit is forfeited if the student does not enroll for the specified semester.

TUITION DEPOSIT

A deposit of $200.00 is required of all students planning to return to the University for their sophomore, junior or senior years. It is payable by July 1, and is credited toward charges for the fall semester. The deposit is forfeited if the student does not enroll for the specified semester.

KEY DEPOSIT

A deposit of $5.00 for each key issued is required, refundable upon the return of the key. The deposit is forfeited if the key is lost, or is not returned within 30 days after the close of school or departure of the student from campus.

SUMMMARY OF TUITION AND OTHER CHARGES

Annual Educational Expenses Modules I-IV, 1974-75:	
Tuition	$3100.00
Board (Range $390-$770)	770.00
Room (Range $640-$840)	715.00
General fees (consolidated, student activity, health fee)	150.00
Sub Total (Continuing Students)	$4735.00
Charges which apply to new students only:	
Contingency deposit	25.00
Orientation fee	30.00
Total	$4790.00
Other Fees:	
Application fee (Undergraduate)	15.00
Health and accident insurance (optional)	47.00
Transcripts (no charge for first one)	1.00
Deposits:	
Admission deposit (freshman)	100.00
Tuition deposit (upperclassmen)	200.00
Dormitory deposit	25.00
Key Deposit	5.00

IDENTIFICATION CARDS

Identification cards are issued each year to all students without charge. This card is your official college identification and should be carried at all times. Loss should be reported immediately to the Purchasing Office. There is a $3.00 replacement charge for lost IDs.

STUDENT SERVICES

DINING HALLS

Dining Halls in Little Commons, Jefferson Hall, and Dana Commons are operated for the convenience of students and staff of the University. Service is cafeteria style. The snack bar in Jefferson Hall is open to all members of the Clark community. A Pub where beer, wine, and sandwiches are served is located in Dana Commons, and is open to members of the University community who have passed their 18th birthday.

KOSHER MEAL PLAN

A Kosher Meal Plan, organized by the Clark Chapter of Hillel, is available, at an additional charge, for students who wish to observe Kosher dietary laws. At the present time, the Plan provides for Evening Meals only.

DORMITORIES

Freshmen are ordinarily expected to live in University dormitories. Upperclassmen usually have the option of living in dormitories or moving off campus into private apartments. A request to live on campus is considered binding for the academic year; exceptions, of course, are made if a student withdraws or takes a leave of absence.

HEALTH SERVICE

The University Health Service provides for out-patient facilities for minor medical services to all students. A nurse-practitioner, a part-time nurse, and two part-time physicians are in attendance. Other physicians, health specialists, and hospitals are available in Worcester.

FRATERNITIES

Tau Epsilon Phi, Clark's only fraternity, maintains a House near the campus at 40 May Street. Its members are involved in numerous campus organizations and sponsor small dances which are open to the entire Clark community, as is the fraternity itself.

KEYS AND KEY SECURITY

Key Deposit: A deposit of $5.00 for each key issued is required, refundable upon the return of the key. The deposit is forfeited if the key is lost, or is not returned within 30 days after the close of school or departure of the student from campus. *I.D.Required:* Clark I.D. cards must be shown for issuance of keys.

PHYSICAL EDUCATION AND ATHLETICS

Programs are designed to stimulate and encourage students to wider participation in physical activities to promote health and mental efficiency and lead to continuing participation throughout life. Participation is voluntary.

INTERCOLLEGIATE ATHLETICS

For students with a reasonably high level of skill and a well defined and strong interest in athletic competition, intercollegiate schedules are arranged in soccer, cross-country, golf, hockey, baseball and track for men; also for men and women, in basketball, crew, tennis, and frisbee. Additional intercollegiate competition may be arranged as student interest warrants.

Clark University is a member of the National Collegiate Athletic Association, the Eastern College Athletic Conference, the New England College Athletic Conference and numerous sports associations.

INTRAMURAL ATHLETICS

The opportunity to gain some of the benefits of participation in competitive athletics is offered to all students through organized intramural competition in touch football, basketball, volleyball, tennis, handball, table tennis, paddle rackets and softball.

COED RECREATIONAL ATHLETICS

Students may participate in Coed and Recreational Leisure Time Activities including Archery, Badminton, Basketball, Fencing, Golf, Gymnastics, Horseback riding, Sailing, Swimming, Tennis, Softball, Volleyball, and in several Dance activities, including Folk, Square, and Modern Dance. The same activities are available to Men's and Women's Groups. (Off campus arrangements may be made for Golf, Sailing, Horseback riding and Swimming).

ADMISSION

FRESHMAN ADMISSION

Clark University welcomes applications for admission from men and women without regard to race, creed, color, or national origin. Selection is competitive and is based primarily on academic promise as indicated by secondary school performance, recommendations, and Scholastic Aptitude Test scores. Secondarily, decisions reflect consideration of the individual experience and particular circumstances unique to each candidate.

ENTRANCE REQUIREMENTS

In general, the completion of a minimum of 16 acceptable units of credit in a four-year secondary school program or its equivalent is required for admission to the freshman class. Such preparation typically includes four years of English; two or more years of any foreign language studied; two or more years of mathematics (three or more for those planning a science or mathematics major); at least one year each of social studies and natural science (more laboratory work for those planning a science major); and other credit electives, including the arts, recognized in the secondary school curriculum.

SCHOLASTIC APTITUDE TEST

All applicants must submit by January of their final year of secondary school the results of the Scholastic Aptitude Tests as administered by the College Entrance Examination Board. Achievement Tests are not required, but candidates who have studied French or Spanish are advised that results of Achievement Tests in these subjects are used to help determine advanced placement.

EARLY ADMISSION

Applications from accelerating students are encouraged when supported by unqualified and enthusiastic school recommendations. Official records of all secondary schools must be submitted in every case.

EARLY DECISION

Realizing that many students do not decide on their first choice of college until well into their senior year in secondary school, Clark has established two application deadlines for Early Decision candidates. Any student who submits an application and registration fee of $15.00 by November 1, clearly indicating Clark as his/her first choice, will be notified by December 1. All other applications indicating Clark as first choice should be received by January 15, and will be acted upon by February 15. Although participation in Clark's Early Decision Plan does not preclude regular applications to other colleges, it does imply a commitment by the student to withdraw all other applications upon notification of acceptance. A deposit of $100.00, non-refundable, is required of accepted candidates.

REGULAR ADMISSION

For freshman admission in September, candidates should initiate an application as early as possible during the first semester of the final year in secondary school, and no later than February 1. An application fee of $15.00, non-refundable, must accompany each application unless a waiver is being requested.

NOTIFICATION OF ADMISSION AND DEPOSIT

Time of notification of admission to the incoming freshman class is normally on or about April 15. Students who have applied for *early decision* will be notified on or about December 1 or February 15.

Upon receipt of a formal offer of admission, undergraduate candidates must indicate acceptance of the offer by making an admission deposit of $100.00, non-refundable, to reserve a place at the University. This deposit is credited towards the first semester charges.

DEFERRED ENROLLMENT

Students wishing to elect the deferred enrollment option must submit a request in writing. The tuition deposit becomes due on April 1 of the following year for September enrollment, or by December 1 for the following January. Students seeking deferred enrollment should be prepared to submit transcripts of work completed elsewhere, if appropriate.

ADVANCED STANDING

Freshmen may enroll with advanced standing upon presentation of a transcript for college-level work already completed. Additional credit or placement may be earned on the basis of Advanced Placement Test scores of 4 and 5. Scores of 3 are awarded credit at the discretion of the department concerned.

Further information concerning testing programs may be obtained from the student's college advisor or from the College Entrance Examination Board which may be addressed in the East at Box 592, Princeton, New Jersey 08540, and in the Far West at Box 1025, Berkeley, California 94701.

CAMPUS VISITS AND INTERVIEWS

Candidates for admission are encouraged to visit the campus and are invited to write or call the Admissions Office for detailed information concerning schedules, organized tours, appointments, and interviews. Although campus interviews are not required of applicants, we welcome the opportunity to arrange them for students wishing to visit Clark.

HOUSING ARRANGEMENTS

All single freshmen not living with their families are expected to live in University dormitories. Rooms are assigned by the Dean of Students during the summer prior to the arrival of the freshman class. Inquiries about housing should be sent to the Office of the College.

TRANSFER APPLICANTS

Clark welcomes applications for admission with advanced standing from students attending two and four year institutions. The majority of students admitted enter at the junior level; many do, however, transfer to Clark with sophomore and advanced freshman standing.

Of special interest to transfer candidates are the University's BA/MA program options in Comparative Literature, Environmental Affairs, and International Development.

The application deadline is April 15 (December 15 for places available at mid-year).

TRANSFER REQUIREMENTS AND NOTIFICATION

All applicants for transfer are required to submit evidence of good standing, complete transcripts of all previous academic work, secondary level and beyond, including the Scholastic Aptitude Test if taken, and any other information requested by the Admissions Committee such as recommendations and course description catalogs. Decisions are announced as soon as possible depending upon completeness and scope of records.

TRANSFER CREDIT

Credit is normally given for academic courses previously taken at accredited colleges and universities and for Advanced Placement Test results as described above. Credit for courses at non-accredited institutions is granted on a provisional basis to be evaluated upon successful completion of two semesters of full-time work at Clark. No credit is given for any course completed with a grade lower than a C-minus.

Evaluation of credits for college courses completed elsewhere is made at the time of admission or upon receipt of final transcripts and is used in planning a course program and in provisional classification as a freshman, sophomore, or junior. A maximum of 50 percent of both the Clark B.A. degree and the departmental major requirements may be accepted in transfer, and normally a minimum of two academic years at Clark is necessary for completion of degree requirements.

UNDERGRADUATE FINANCIAL AID

GENERAL INFORMATION

Financial aid is allocated on the basis of financial need and academic performance and consists of scholarships, grants, loans and part-time employment. The Committee on Financial Aid assesses each student's financial circumstances on the basis of the computation system established by the College Scholarship Service of the College Entrance Examination Board, Princeton, New Jersey or the American College Testing Program, Iowa City, Iowa. The assessment takes into account family income and assets, age of parents, financial commitments to other dependents and members of the family, and other special circumstances. It is expected by the University that a student's resources for education will come first from family resources and his own savings and earnings.

COSTS

Expenses at Clark vary from student to student, but an average student expense budget (1974-75) is as follows:

	Resident	*Commuter*
Tuition	$ 3,100	$ 3,100
Consolidated Fee	50	50
Student Activities Fee	75	75
Orientation Fee (Freshmen and Transfers only)	30	30
Contingency Fee (Freshmen and Transfers only)	25	25
Insurance (Optional)	47	47
Health Fee	25	25
Board (20 Meal Plan and Double Room - Average)	1,500	
Books and Supplies - Average	150	150
Clothing, Laundry, Recreation, Incidentals	450	400
Travel	*	175

*A reasonable allowance should be budgeted for travel between University and student's home.

METHOD OF APPLICATION

Freshmen — To be considered for financial aid, a candidate for the Freshman Class must complete the following steps:

a. File an application for admission with the Director of Admissions by February 1.

b. File a completed Parents' Confidential Statement with the College Scholarship Service by February 1 (November 1 for early decision candidates) and direct that a copy be forwarded to Clark University. The Parents' Confidential Statement may be obtained from the secondary school guidance office.

c. Residents of Massachusetts are expected to make application to the Board of Higher Education for a Massachusetts State Scholarship. Information is available from secondary school guidance counselors. Students applying from out of state should investigate the opportunity of using their State Scholarship Program at Clark.

d. Notification — Entering freshmen will be notified of the decision of the Committee on Financial Aid simultaneously with the decision of the Admission Committee in mid-April of their senior year in high school.

RENEWAL OF AWARDS

Upperclassmen must reapply annually for financial aid by submitting an updated Parents' Confidential Statement to the College Scholarship Service prior to April 1. Forms may be obtained from the Financial Aid Office of the University.

Transfers — Students applying for admission with Advanced Standing and who are requesting financial aid should submit the Parents' Confidential Statement to the College Scholarship Service prior to April 15.

Applications for financial aid cover all scholarships, grants, loan funds-including National Direct Student Loans-and College Work-Study funds administered by the University. Because the University's financial aid funds are limited, not all students who apply for aid can be given an award. Students who have financial need and do not receive financial aid from the University at the time of admission should review their financial resources before accepting an offer of admission to the University since a student should not ordinarily expect to receive an award as an upperclassman if he has not received an award as a freshman. Each year the University is able to help only a few new upperclass applicants for assistance.

The policy of the University is to renew aid to a freshman who continues to demonstrate financial need as an upperclassman. Financial aid awards may be adjusted from year to year as the student's need varies.

The Committee on Financial Aid expects that all financial aid recipients will contribute to the cost of their education from summer and part-time employment.

Financial aid awards have reasonable average-earnings expectations factored in. It is also expected that students on financial aid will not maintain or operate motor vehicles while in attendance at the University unless an automobile is needed for commuting purposes or in the earning of income.

The University administers financial aid by a method called "packaging", i.e., each recipient is normally expected to meet part of his financial need through employment and the use of loan funds, with the balance coming from the University or some other source in the form of a scholarship or grant. Packaged financial aid awards are typically composed of a combination of two or more of the following four categories.

Jonas Clark Scholarships—A portion of the University's income is reserved for this purpose. Gifts from Alumni, parents and friends provide additional, important sources of funds for scholarship purposes.

Supplemental Educational Opportunity Grants are part of a Federal program of assistance to college students. They are renewable on a yearly basis and are specifically designated for students who demonstrate exceptional financial need.

National Direct Student Loan Program provides funds for long-term loans which bear no interest until a person has completed full-time study. Normally a person borrowing from these funds will repay the amount over a period of up to ten years. National Direct Student Loans are granted on the basis of financial need and available funds.

College Work-Study Program—There are Federal funds to provide employment for students who demonstrate exceptional financial need. Application for employment through the College Work-Study Program may be made at the Financial Aid Office.

Further details on all forms of financial aid at the University may be obtained by writing or visiting the Financial Aid Office.

SUPPLEMENTARY SOURCES OF ASSISTANCE

Basic Educational Opportunity Grants—This is a new program of Federal assistance for students from low income families. Students should discuss application procedures with their Secondary School guidance counselor.

Guaranteed Student Loan Program (Also known as the Federally Insured Student Loan Program)—Guaranteed Loans are generally available in the various states and should be applied for through the local banks. Students may borrow up to $2500 for each academic year and not more than $7500 as an undergraduate.

The interest rate on the Guaranteed Loan is seven percent (7%). However, some students while in college, may be eligible to have the Federal Government pay the interest. Details on eligibility are available from the bank.

Students not eligible for the Federal interest benefits may still apply for a loan, but will have to pay their own interest from the time the loan is dispersed.

State Scholarships—Information pertaining to State Scholarship Programs is available at secondary school guidance offices.

Veterans' Benefits—Veterans admitted to Clark should communicate with their local Veterans Administration Office requesting an application for a program of education under Public Law 89-358.

Student Employment—Part-time employment for undergraduates is coordinated through the Financial Aid Office. There is work available in the various offices and departments of the University. Applications are available from the Financial Aid Office.

Most scholarships awarded by the University are designated Jonas Clark Scholarships. Funds for these scholarships are derived from University income and from endowed funds as follows: Because of the various restrictions placed on these funds, it is the policy of the College to select eligible recipients. Students should not apply directly.

The Reginald Bryant Allen Fund
The Alumni Group Scholarship
The B'nai B'rith Scholarship
The Gertrude and William Brodie Award
The Reina and Isidore Chaiklin Scholarship Fund
The Charles W. and Annie L. Bruninghaus Fund
The Clark University Faculty Women's Club Scholarships
The Theodore T. and Mary E. Ellis Fund
The Albert C. Erickson Scholarship
The A.D. Ross Fraser Scholarship
The Aaron Fuchs Memorial Scholarship Fund
The Paul S. Goldman Memorial Scholarship
The Bertram L. and Bessie T. Handleman Fund
The Frank H. Hankins Scholarship
The High School Basketball Tournament Scholarship
The Gertrude and Eva Hillman Scholarship
The Frances Tufts Hoar Fund
The Gordon A. Hubley Fund
The M. Hazel Hughes Scholarship
The George N. Jeppson Scholarship Fund
The Dr. Edmund Randolph Laine Scholarship Fund
The David Ashley Leavitt Memorial Scholarship Fund
The Levi Knowlton Fund
The Elizabeth T. Little Scholarship Fund for Women
The Homer Payson Little Scholarship in Geology
The Livermore and Ambulance Drivers Scholarship
The Robert H. Loomis Scholarship
The National Council of Jewish Women Scholarship
The Alice Friend Newton Memorial Scholarship
The Abraham Persky Scholarship Fund
The Charles B. Randolph Fund
The Helen Brewster Randolph Memorial Scholarship
The Jennie L. Richardson Scholarship
The William Richardson Scholarship
The Sanford Memorial Scholarship

The Samuel Schanberg Memorial Scholarship Fund
The Fredric T. Sewall Scholarship Fund
The Henry L. Signor Scholarship
The Benjamin R. and Grace F. Vanderford Student Aid Fund
The Whitman Scholarship
The Henry A. Willis Scholarship

THE GRADUATE SCHOOL

GENERAL INFORMATION

Clark University was initially established in 1887 as the second graduate institution in America. Its faculty and graduates have endowed the University with an impressive record of accomplishments through the years. Under the administration of the Graduate Board, Clark offers programs leading to master's and doctor's degree to qualified holders of a bachelor's degree or its equivalent of attainment.

Master of Arts degrees are offered in the fields of biology, biomedical engineering (in cooperation with Worcester Polytechnic Institute), chemical physics, chemistry, economics, education, English, geography, government, history, international relations, mathematics, physics and psychology. The Master of Business Administration degree is offered by the Department of Management.

Doctor of Philosophy degrees are offered in biology, chemistry, chemical-physics, economics, geography, history, mathematics, physics and psychology. A Doctor of Education degree is offered by the Department of Education.

Post-doctoral training is conducted in geography, psychology and the sciences. Inquiries should be addressed to the chairman of the department concerned.

Departments which do not at present accept candidates for graduate degrees may offer courses which are suitable for inclusion in a program of graduate study.

Scholarships, fellowships and assistantships are listed at the end of this section. Additional information concerning departments and their offerings will be found in the section entitled "Departments and Courses."

INQUIRIES

Inquiries by students in American institutions concerning specific programs of graduate work should be addressed to the chairman of the department concerned. Please check catalog section, "Departments and Courses" for proper mailing address. Inquiries by foreign students should be addressed to the Dean of the Graduate School.

ADMISSION TO THE GRADUATE SCHOOL

Admission to the Graduate School may be granted only by the Dean of the Graduate School acting for the Graduate Board on the recommendation of a department of the University. Admission to the school does not imply admission to candidacy for a degree.

Application: A prospective applicant from an American institution should communicate with the department in which he expects to do his major work. If he is encouraged by the department to make application, he will be provided with an application form which, accompanied by a $20 application fee should be returned to the chairman of the department. In addition, the applicant should arrange to have sent to the chairman of the department concerned an official transcript of all undergraduate and any subsequent academic work, and three letters of recommendation from persons who are competent to judge his qualifications for graduate study.

Departments may request the submission of additional material, and most require a record of attainment in the Graduate Record Examination given by the Educational Testing Service, Princeton, New Jersey. All applicants are urged to take, and to submit the results of the Graduate Record Examination verbal, quantitative and advanced tests.

A foreign student, if encouraged by the Dean to make formal application, should provide a certified English translation of his official record (if not in English), evidence of English proficiency (TOEFL), at least two letters of recommendation and a statement concerning his financial resources, or agency support.

Applications for both admission and for financial aid should be completed not later than February 15 if the applicant intends to begin his studies the following September. Applications for admission may be submitted, however, throughout the year.

Admission: Admission to the Graduate School is granted for entry only at a specified time and lapses if the student fails to enter at that time. Admission as a part-time graduate student may be granted to qualified applicants who cannot devote full time to study, upon recommendation of the Department.

Application for regular admission should be made through the department concerned. Application for admission as a *special status graduate student* (not in a degree program) should be made through the Registrar's Office.

If a student, when admitted, was a candidate for a degree elsewhere, he must arrange upon receipt of that degree to have a supplementary transcript, including a notation of the degree conferred, sent directly to the Dean of the Graduate School.

MASTER OF ARTS

Residence: An academic year (8 semester courses) of study in residence is a minimum requirement for a master's degree. Residence study is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the University faculty.

Foreign Language: A reading knowledge of a foreign language may be required of candidates for the degree of Master of Arts at the discretion of the major department. Language or other special requirements are included in the department announcements in the catalog.

Candidacy: Application for admission to candidacy for a master's degree should be filed with the Dean of the Graduate School not later than the first week of the last full semester which the student expects to spend in residence as a candidate for his degree. Forms are obtainable at the Registrar's Office.

Applications will be considered by the Graduate Board when the student has completed one semester of full-time graduate work or its equivalent in residence at the University and obtained the written endorsement of his major department.

Candidacy for the degree of Master of Arts is valid for four years after admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years on vote of the Graduate Board.

If admission to candidacy is not filed at the time of completion of residence, then after four years, admission to candidacy will be approved once for a three-year additional period by vote of the Graduate Board.

Course and Examination Requirements: Each student must meet a minimum requirement of 10 semester courses, and his program must be approved by the chairman of the department. One of his courses may be a research course devoted to the preparation of his thesis. Credit for a maximum of two courses of course work at another institution may be approved by the Graduate Dean, acting for the Graduate Board, upon the recommendation of the department.

Each candidate must make a satisfactory record in such written examinations as may be required by the major department and in a final oral examination by a committee of three or more, one of whom must be a member of the Graduate Board.

Thesis: The thesis is written on a topic in the field of the student's special interest under the supervision of a member of his major department and in a style, length and format that is appropriate to the problem being researched. The ribbon copy of the thesis, a precis approved by the supervising instructor, and an academic history must be deposited in the Registrar's office not later than three weeks before the date of the commencement at which time degree is to be conferred. At least one additional copy of the thesis and the precis must be delivered to the major department which may require more than one copy. The precis may not exceed 75 words in length. The title page, precis and academic history forms are obtainable from the Registrar's Office. The ribbon copy of the thesis must be typed as prescribed in "The Master's Thesis". These instructions are available at the Registrar's Office.

The thesis is deposited by the Registrar in the University Library. The precis is printed in an annual publication, *Dissertations and Theses.*

Diploma Fee: This fee for the Master of Arts Degree is $25.00. It covers the cost of the diploma, publication of the precis in the booklet *Dissertations and Theses* and binding of the library copy. It is payable when the thesis is deposited with the Registrar. Students who do not write a thesis, including those receiving the degree on the alternative program, must pay this fee no later than the date on which theses are due in the Registrar's Office.

Alternative Program: A candidate for the degree of Master of Arts may be recommended for the degree without a thesis when he has passed the preliminary doctoral examination.

Non-Resident Students: Students who have been admitted to candidacy for the degree and are not *registered* students are required to pay the non-resident fee of $12.50 per semester. This fee doubles on renewal of candidacy.

MASTER OF ARTS IN EDUCATION

The residency, candidacy, course, examination, and diploma fee requirements are the same as those listed for the degree of Master of Arts.

Thesis: Students may choose one of three options, subject to the approval of the Department of Education. They may choose to (1) prepare a thesis as required for the M.A. degree; or (2) elect two additional subject-matter courses; or (3) elect a research-seminar in which papers are prepared and presented to fellow students and staff.

Further information concerning the degree of Master of Arts in Education may be found in the catalog section, "Departments and Courses," listed under the Department of Education.

MASTER OF BUSINESS ADMINISTRATION

This degree is offered through the Department of Management. For further information, see the catalog section "Departments and Courses," listed under the Department of Management.

DOCTOR OF EDUCATION

The program leading to the degree of Doctor of Education emphasizes human development and learning as it relates to curriculum, instruction, and evaluation and in the sociology of education. The requirements for this degree closely parallel those for the degree of Doctor of Philosophy (see below). See catalog section on Department of Education for further information.

DOCTOR OF PHILOSOPHY

Only such candidates as give evidence of general proficiency, power of investigation and high attainments in the special fields in which their major subjects lie will be encouraged to proceed to the degree of Doctor of Philosophy.

Residence: The minimum requirement is one year of full-time study (8 semester courses beyond the M.A.), or its equivalent in part-time work, in residence which is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the University faculty.

If the degree of Master of Arts has been earned at Clark, this requirement is an addition to the residence requirement for this degree.

Foreign Language: Each graduate department sets its own language or related requirements as the student's field of research may demand, and must report such requirements in each case to the Dean of the Graduate School. If a language is required either the Educational Testing Service Foreign Language Tests or on-campus testing are employed at the discretion of the department.

Preliminary Examination: Upon completion of preparation in his fields of study a prospective candidate takes a preliminary examination set by his major department. This examination may be written or oral, or a combination of both. The chairman of the department may invite non-members of the department from within or without the University to participate in the examination.

Candidacy: An application for admission to candidacy should be filed when the applicant has (1) completed two full academic years of graduate work, or its equivalent in part-time work, including one year at Clark University; (2) completed the departmental requirements in a foreign language; (3) passed a preliminary examination in his chosen field of study; (4) obtained the written endorsement of his major department. Application forms are obtainable at the Registrar's office.

Candidacy for the degree of Doctor of Philosophy is valid for four years after admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board. Should a period of four years elapse between completion of prerequisites to filing for candidacy and actual filing for candidacy, then, for satisfactory reasons, candidacy may be accepted once for a three-year period by vote of the Graduate Board.

Dissertation: A dissertation which is expected to make an original contribution to some special field of knowledge is required of each candidate. The dissertation, approved by the chief instructor or dissertation committee, is laid before the examining committee at the final oral examination.

An abstract of the dissertation, not exceeding 600 words in length, and a precis, not exceeding 75 words, both approved by the instructor or committees under whom they were written, are also required.

Four weeks before the degree is to be conferred, the ribbon copy of the dissertation, together with two official title pages, an academic history, the ribbon copy of the abstract and of the precis, each in a form prescribed, must be delivered to the Registrar. At the same time, one or more copies of the dissertation and of the abstract may be required by the major department. The title pages, precis and academic history forms are obtainable at the Registrar's Office. The ribbon copy of the dissertation must be typed as prescribed in "The Doctoral Dissertation" and "Suggestions for the Preparation of Doctoral Dissertations for Microfilming". These instructions are available at the Registrar's Office.

The Registrar deposits the dissertation and the abstract in the University Library where they remain permanently. A microfilm copy of each dissertation is made by University Microfilms, Inc., of Ann Arbor, Mich., and is available for duplication by them on request. The abstract is printed in *Dissertation Abstracts;* the precis is printed in an annual publication, *Dissertations and Theses.*

Articles published in referred journals will be accepted in lieu of a dissertation provided guidelines established by the Graduate Board are met.

Final Examination: The final examination is oral and lasts for at least two hours. Additional written examinations may be given if the major department so directs. The candidate is expected to defend his dissertation and, at the discretion of the examining committee, may be questioned on the entire special field of his study. The oral examination is conducted by a committee of at least four members, composed of the chairman of the department, at least one other member of the Graduate Board, and such members of the department and non-members from within or without the University as the chairman may appoint. The chairman notifies the Dean of the Graduate School, at least one week in advance, of the time and place of the examination and the composition of the committee. The Dean is authorized to invite any person from within or without the University to be present and to assist in the examination.

Diploma Fee: This fee for the Doctor of Philosophy degree is $85.00. It covers the cost of the diploma, hood, publication of the precis in the publication *Dissertations and Theses,* publication of the abstract in *Dissertation Abstracts* and binding of the library copy of the dissertation. It is payable when the dissertation is deposited with the Registrar.

Non-Resident Students: Students who have been admitted to candidacy for the degree and are not *registered* students are required to pay the non-resident fee of $25.00 per semester. This fee doubles on renewal of candidacy.

POST-DOCTORAL STUDY

Post-doctoral students are classified in three categories: *Honorary Fellows* who are visitors for varying lengths of time, always more than a few days, who wish to observe activities of a department, to study, or to carry on research, but without formal teaching duties or support by the University; *Research Associates* who work full-time with designated members of the University staff on research projects, normally supported by grants, without formal teaching duties but with some responsibility for directing laboratory assistants; and *Trainees* who enroll in a formally offered post-doctoral training program.

The Honorary Fellow and Research Associates enjoy faculty status, although the extent to which faculty privileges may be granted may be restricted by availability of space and other resources.

GRADUATE SCHOLARSHIPS, FELLOWSHIPS AND ASSISTANTSHIPS

Graduate fellowships and scholarships are provided for well-qualified graduate students by the University from endowed funds and from other sources. Financial aid to graduate students is available also in the form of grants from a number of special funds, and in some departments, from sponsored research grants. A limited amount of part-time employment is available in the various offices and departments of the University. Students who receive awards must obtain permission from the department before accepting employment.

All applicants for admission who request financial assistance will be required to file a Student Financial Statement with the College Scholarship Service as part of their application. This form, along with specific instructions, should be requested by contacting the Director of Financial Aid at Clark University. Financial aid is not necessarily based on an evaluation of the student's need. However, a portion of the assistance offered may be in the form of National Direct Student Loans or College Work-Study employment. Both of these Federal programs require that a student demonstrate financial need by completing the Student Financial Statement. Since Foreign Students are not eligible for these funds, they will not be required to file a Financial Statement.

Application:

Application for a scholarship or fellowship to begin in September should be made before February 15 to the chairman of the department in which the applicant expects to do his major work. Late applications, after endorsement by the department, go to the Graduate Dean for final approval.

Research Fellowships

These fellowships may be awarded to graduate students who have fulfilled their residence requirements and who are pursuing a full-time doctoral program on campus.

Teaching Assistantships:

There are three categories for Teaching Assistantship appointments:

1. *Part-time Lecturer*—a non-probationary, part-time faculty position which does not lead to consideration for tenure or faculty

fringe benefits (TIAA, vacation, etc.). The student is responsible for a small class and should have considerable independence over all aspects of teaching and grading. He will be under the general supervision and direction of a senior faculty member.

This category is reserved for the advanced student who has manifested clearly his skill in teaching and is qualified and experienced in the subject he will teach. The student should be accorded as many faculty privileges as possible, e.g., attending department meetings and having office space. Stipend for this position is $3,200 for nine months.

2. *Teaching apprentice*—students with prior teaching experience, either as undergraduates or as a graduate assistant. Responsibilities include conducting discussion sections for a course, supervising laboratory sections, running tutorial sessions, grading papers and projects and discussing these with the undergraduate students.

The student in this category should be under the direction of a professor who would assume responsibility for his training as a teacher. Stipend for this category is $3,000 for nine months.

3. *Teaching Assistant*—students with little or no teaching experience. Responsibilities include tasks that allow them to observe experienced teaching assistants or instructors and learn their pedagogical methods. Duties are assigned on a job basis and may include assisting other senior TA's, setting up and tearing down laboratory equipment and doing a variety of other tasks associated with teaching a course or section.

The assistant may grade examinations only if he is part of a general grading team of assistants or under the direct supervision of a senior TA or instructor. Stipend for this category is $2,800 for nine months.

The time commitment for each category is approximately half-time. Tuition will be remitted on all three categories. The number of hours of study an assistant at any level takes in addition to his teaching responsibilities should be decided by the department chairman with overall supervision from the Graduate Dean. The Internal Revenue ruling which states that payment for teaching is non-taxable provided it is a requirement for an advanced degree is still in effect, although we have been informed that some cases at other schools have been questioned. If a student chooses to have tax withheld, he is usually entitled to a tax refund when he files with the Internal Revenue Service.

Note that the departments of Biology, Chemistry, Economics, Geography, Government, History, Mathematics, Physics, and Psychology require teaching experience for graduate degrees. See the departmental announcements in the catalog section on "Departments and Courses".

Assistantships:

In several departments, assistantships are available. They involve a variety of services including research with stipends to correspond, and usually provide the student with experience which will be useful in his later professional work.

Graduate Fellowship and Scholarship Funds:

Stipends for fellowships and scholarships are provided by:

The *Alumni Association Fund,* provided by alumni who hold the degree of Doctor of Philosophy to benefit students studying for that degree.

The George S. Barton Fund, a bequest from the Honorable George S. Barton of Worcester, to be used for the benefit of native-born citizens of Worcester.

The Elnora W. Curtis Fund, a bequest from Dr. Elnora W. Curtis, A.M. 1908, Ph.D., 1910, for the benefit of graduate students.

The Eliza D. Dodge Fund, to be granted to graduate students of limited means who are engaged in research work.

The Henry Donaldson Jordon Award in History for high standard of scholastic achievement, and qualities of character which will be valuable in the training of teachers.

The Joseph F. Donnelly Memorial Fund, a bequest from Lucretia F. Donnelly to help men who are enrolled in a course leading to the degree of Doctor of Philosophy.

The John White Field Fund, established by Mrs. Eliza W. Field to provide for the minor needs of a scholar or fellow.

The Austin S. Garver Fund, a bequest from Austin S. Garver, member of the Board of Trustees from 1908 to 1918.

Graduate School Scholarship Fund, a bequest from Alexander H. Bullock, a member of the Board of Trustees from 1926 to 1946 and president of the board from 1938 to 1946.

The George Frisbie Hoar Fund, the gift of Andrew Carnegie in honor of the second president of the University's Board of Trustees.

The Myers Fund, a gift of George E. Myers, Ph.D., '06, to assist graduate students to do research in education and psychology.

The Charles H. Thurber Fund, provided by Charles H. Thurber, member of the Board of Trustees from 1913 to 1938 and president of the board from 1919 to 1937.

GRADUATE LOANS

Loans, bearing interest at three per cent per year after completion of residency, are available for full-time graduate students upon registration. Applications are available at the Graduate School Office.

Federal funds are available for Graduate Students at Clark University in the form of National Direct Student Loans. The maximum amount a student may borrow in any one academic year is $2,500. The total amount a student may borrow as an undergraduate and graduate is $10,000.

The National Direct Student Loan Program provides funds for long-term loans which bear no interest until a student has completed full-time study. Normally a person borrowing from these funds will repay the amount over a period of up to ten years. National Direct Student Loans are granted on the basis of financial need and available funds. All National Direct Loan commitments are made contingent on Congressional appropriation of funds annually for this program.

Contact Roger Keith, Director of Financial Aid, for further information on the National Direct Student Loan Program.

LOAN FUNDS

The Mary S. Rogers Scholarship and Loan Funds, established in 1926 for the benefit of students in the graduate school.

The Mary M. Thurber Fund, established by the late Dr. Charles L. Thurber, former president of the University Board of Trustees, as a memorial to his mother.

For loans from these and other sources that may become available, application should be made at the Graduate School Office.

DEPARTMENTAL FUNDS

The Wallace W. Atwood Research Fund. The income of this fund may be used at the discretion of the staff in the Graduate School of Geography for the promotion of field studies in geography by any member of the staff, or any one of the alumni holding a graduate degree from the Graduate School of Geography, or for the publication of results of such research work.

The Chester Bland Fund. The income of this fund is preferably used to provide aid to a promising student, either in residence or engaged in research elsewhere under the direction of the Department of History. It may also be used to defray the expense of visiting lecturers or of departmental research.

The Wallace W. Greenwood Fund. The income only is to be divided between the Departments of Physics and Chemistry and to be used for any purpose within the scope of these two departments.

The Morton L. "Sonny" Lavine Foundation is a memorial to Lieutenant Lavine of the United States Army, World War II. The income is to be used for the promotion of research in the Department of History.

The Libbey Fund, bequeathed to the University by Mary E. Libbey, is to establish a fellowship in physical geography and to aid the Department in that field.

HOUSING AND BOARD

Off-campus rooms and apartments for both men and women are available in the immediate area of the University. For information concerning accommodations, write directly to the Office of Buildings and Grounds, which keeps a bulletin board of available off-campus rooms and apartments, or to the department concerned. The Graduate School office will also be glad to assist students in finding housing. Students should plan to arrive a few days before registration in order to arrange for housing because of the limited number of suitable off-campus apartments in the immediate area.

Graduate students are invited to take their board in the University dining halls under one of the food plans available. They will also find the Snack Bar in Jefferson Hall available for single meals.

HEALTH SERVICE AND INSURANCE

A low-cost insurance plan covering ordinary medical expenses and limited maternity benefit for married students is available through the University. Unless a student is protected by similar insurance, he must enroll in this plan since all graduate students must be covered by Health and Accident Insurance. Students are not automatically covered by this insurance but must apply for it through the Graduate School Office where applications are available. Blue Cross - Blue Shield will be offered as an alternate Insurance Plan.

Graduate students are entitled to use of the University Health Service for minor first-aid needs.

GRADUATE TUITION AND OTHER CHARGES

Tuition and insurance charges are payable when the semester bill is received. Identification cards are provided each year of residence. A late registration fee of $25.00 is charged if registration is not completed by the end of the second week of the semester. Candidates who are not in residence must pay the non-resident fee until the requirements for the degree are fulfilled; non-payment will automatically terminate candidacy.

SCHEDULE OF TUITION AND OTHER CHARGES

Tuition: Full Program: $1,550.00 per semester.
If less than a full program, the student will be charged according to the fraction of a program indicated by the Chairman of the department on the registration card.
Tuition for Special Graduate Students $387.50 per course

Insurance:	*Regular Coverage*
Single Students	*$ 47.00*
Married Student & Spouse	*$170.00*
Family Plan	*$210.00*
Health Service Fee	*$ 25.00*

Diploma Fee: (payable at the time the thesis or dissertation is deposited with the Registrar):

Students who do not write a thesis or dissertation, including those receiving the degree on the alternative program, must pay this fee no later than the date on which theses are due in the Registrar's Office.

Master's Degrees	$25.00
Doctor of Philosophy and Doctor of Education	$85.00

Non-Resident Candidate Fees: (payable on November 1 and March 1). If the thesis or dissertation is deposited with the Registrar before either date, no fee is charged for the semester.

The fees double upon renewal of candidacy.

Master' Candidates	$12.50 per semester
Doctoral Candidates	$25.00 per semester

(For the Master of Business Administration tuition and fees, see the catalog section "Department of Management".)

REFUND

A student who officially withdraws in writing during the first two weeks of any semester is allowed a refund of 60 per cent on tuition; during the third week, 40 per cent; during the fourth week, 20 per cent; after the fourth week there is no refund. There is no refund on other charges, except board, when a student withdraws from the University.

THE SUMMER SCHOOL

SUMMER STUDY

Intensive instruction in numerous fields of study is offered in the summer program. A variety of courses is offered for undergraduates, graduate students and teachers. A student may register for up to a maximum of 3.0 units of credit each summer, by attending both sessions. Evening courses are also available during the summer to all students to continue their education while engaged in day-time employment.

DEGREES AND CREDIT

All courses offered in the Summer School are accepted at Clark for credit toward bachelor's degrees unless they are specifically limited in the description of the course. Many courses count toward the degrees of Master of Arts, Master of Arts in Education and Doctor of Philosophy. However, approval for such courses should be obtained in advance from the student's major department.

Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the staff.

SUMMER SCHOOL CATALOG

Detailed information concerning the Summer School is contained in a Summer School catalog which may be requested from the director of the Summer School.

THE EVENING COLLEGE

GENERAL INFORMATION

The Evening College, established in 1953 as an institution devoted to adult learning, has three primary functions. With the conviction that education in our modern society must be a lifelong process, it provides university education for adults of all ages who seek further knowledge and personal development through selected studies in the broad areas of the liberal arts. Further, in recognition of the rapidly developing and changing needs of business and the professions, it provides courses designed to help working men and women improve their occupational skills and to prepare for positions of increased responsibility.

Secondly, the Evening College provides an opportunity for adults to earn the bachelor's degree, exclusively by evening study, through programs planned to meet the unique educational needs of the mature person. Formal programs are available leading to the degree of Bachelor of Fine Arts, Bachelor of Science in either general studies or business administration and the Master of Public Service with a major in criminal justice. The Evening College also offers the Diploma in General Studies after completion of a short formal program in liberal education designed specifically for adults.

Finally, as a community service, the Evening College plans to offer several weekend workshops which may be taken on either a non-credit or credit basis.

INDIVIDUAL COURSES

Admission to individual courses in the Evening College is open to all interested adults seeking to further their education. High school graduation is not required but desirable. Continued attendance is contingent upon evidence of ability to profit from the instruction offered. Advanced courses for which prerequisite courses or other experience are indicated are open only to persons who meet the stated requirements.

ADMISSION TO FORMAL PROGRAMS

Adults applying for a formal program of study in the Evening College will be required to submit records of their previous schooling prior to admission. Except under unusual circumstances applicants must possess a diploma from an accredited high school. Applicants for the Bachelor of Science degree or the Diploma in General Studies who have not attended college previously may arrange to have their high school records forwarded to the Evening College on forms supplied to them on request to the college. Adults who have attended other colleges should request that their transcripts be forwarded directly to the Evening College.

EVENING COLLEGE CATALOG

Detailed information about the Evening College is contained in a special catalog which may be requested from the director of the Evening College.

INTEGRATED UNDERGRADUATE-GRADUATE PROGRAMS

In the fall of 1973, Clark University inaugurated a new departure in higher educaion with the creation of a number of programs which bridge undergraduate and graduate education. Noting the changes in graduate education and projected manpower needs in the United States, the University established a new set of program options for advance undergraduate students. Each program normally covers a three-year span, beginning in the junior year and leading directly to an M.A. degree. The B.A. degree is awarded en route to the M.A. degree. The integration of undergraduate and graduate work usually accelerates student progress to an advanced degree. Each degree program has a strong career orientation, providing the student with the knowledge and skills to enter a profession directly or to continue on in a Ph.D. program elsewhere. Each program also emphasizes interdisciplinary education based upon a common core of course work and opportunity for individual professional interests. Formal application and admission to the program is required, and both

Clark and transfer students are encouraged to apply. Transfer students interested in making application to the program should direct inquiries to the Admissions Office.

The University has approved programs in comparative literature, environmental affairs, and international development. The program in comparative literature centers on a problem-oriented approach to literature and theatre. Students will, in consultation with an advisory committee, formulate an individualized program of study which will stress interdisciplinary perspectives around a particular problem or theme. The program in environmental affairs trains professionals for carrying out a particular set of functions (technical, administrative, research, evaluative, planning and teaching) that relate to the understanding and management of environmental affairs. The program in international development trains planners, managers, organizers and educators in international development.

Eventually other integrated undergraduate-graduate programs will be added until a network of such programs is available as a new set of options in the University College.

COMPARATIVE LITERATURE

Participating Faculty

Raymond E. Barbera, Ph.D., Program Director and Professor of Romance Languages
Karl J. R. Arndt, Ph.D., Professor of German
J. Richard Reid, Ph.D., Professor of Romance Languages
Kenneth Hughes, Ph.D., Associate Professor of German
Hartmut Kaiser, Ph.D., Associate Professor of German
J. Fannin King, M.A., Associate Professor of Romance Languages
Walter Schatzberg, Ph.D., Associate Professor of German and Chairman, Department of Foreign Languages and Literatures
Micharl K. Spingler, Ph.D., Associate Professor of French
Marvin A. D'Lugo, Ph.D., Assistant Professor of Spanish
Pierre L. Horn, M.A., Assistant Professor of French
Irene Kriskijans, M.A., Visiting Assistant Professor of Russian
Lori R. Toepel, Ph.D., Lecturer in Classics

Program

The program is available to students who have completed the sophomore year and who are competent in at least one foreign language (French, German, Russian or Spanish). It centers upon a problem or project approach in which the student will, in consultation with his advisor and course instructors, define particular problems or projects which will serve as the focus of his entire academic program over the normal three-year period. A final problem or project, approved by an advisory committee, will be the object of the dissertation for the M.A. degree. The nature of the problems will determine the courses from various disciplines needed for their resolution. Each program will, therefore, be interdisciplinary and will vary according to individual student need and professional interests. Program flexibility depends primarily upon the student's application and ingenuity.

There will be two major tracks or emphases in the program. The *Studies in Narrative* is intended to acquaint the student with the diversity of expression encompassed by the historical development of narrative form, as well as to bring him into contact with a variety of contemporary narrative genres. The principal objective of this track is to develop an awareness of the nature of narrative as a dynamic combination of cultural ambience and the particular artistic techniques of specific authors.

The novel will be a major genre studied in this track. Since the novel cuts across national, political, social, cultural and linguistic barriers and mirrors the enduring obsessions and aspirations of man, the student will explore techniques, patterns and themes in the novels of various cultures. The relatedness of fictional works to the individual's particular problem or project will be stressed throughout.

The *Studies in Drama* concentrates upon what happens to a written text when it is transformed in the theatre. In this track, students will combine the intellectual, scholarly work of a literature department with the creative, skill-oriented work of a theatre art department. There is a recognition that the dramatic text is first of all something written to be performed. The program seeks to unite research and theatrical performance by approaching the latter as an investigatory process essential to a deeper understanding of dramatic art.

The *Studies in Drama* will emphasize studying and staging plays in their original language as well as in English. A Foreign Language Theatre Workshop has been designed to improve language skills through the creative process of play production. Since the Workshop enables the student to master the language while pursuing research in comparative drama, it occupies a central role in this track. A Foreign Languages Summer Workshop provides an opportunity for students to study directly with actors in either France or Spain.

Early in the program, the student will confront the task of formulating the problem or project which will guide his studies. The basic required course, *Fundamentals of Literature,* will stress techniques of problem formulation. A student will then decide to enter either the dramatic or narrative track. The *Nature of Narrative* and the *Nature of Drama,* the foundation courses for each respective track, will develop the problem-solving approach in a more specialized area. The *Colloquium on Problems,* attended by all faculty and students, will be the forum in which the problem-solving approach will be considered in all its ramifications.

A teaching internship will be available for all qualified students in the final year. Interns will serve as drill masters and discussion leaders in foreign language, foreign literature and comparative literature courses and will be involved in the course in its entirety. A student who selects the drama track may in his final year assist in the direction and production of a foreign language play.

Courses

For course listings and descriptions refer to Comparative Literature under Department of Foreign Languages and Literatures.

Financial Aid

Some partial and full tuition remission scholarships will be available in the final year of the program. Several teaching assistantships will also be available to students involved in the teaching internship in their final year. All awards will be based upon merit and need.

Professional Opportunities

Students who complete this program and receive the M.A. degree have several professional opportunities. The student can continue graduate studies either in comparative literature or in the foreign language in which he is proficient. If he has taken the teaching apprenticeship, he has acquired experience in the teaching of foreign language and literature and would qualify for high school or junior college teaching. Students in drama would have career opportunities in the theatre and in teaching. Other professional careers in journalism and translating are also, of course, possibilities.

ENVIRONMENTAL AFFAIRS

Participating Faculty

Harry E. Schwarz, B.C.E., Program Director, Visiting Professor of Environmental Affairs and Adjunct in Geography
Leonard Berry, Ph.D., Professor of Geography
Saul B. Cohen, Ph.D., Professor of Geography and Director, Graduate School of Geography
Stephen L. Feldman, M.A., Assistant Professor of Geography
Christoph Hohenemser, Ph.D., Associate Professor of Physics
Richard Howard, Ph.D., Assistant Professor of Geography
Roger E. Kasperson, Ph.D., Associate Professor of Government and Geography
Robert W. Kates, Ph.D., Professor of Geography
Laurence A. Lewis, Ph.D., Associate Professor of Geography
Michael McClintock, Ph.D., Professor of Physics, Technology and Man Programs
Frank Puffer, Ph.D., Associate Professor of Economics
John Reynolds, Ph.D., Professor of Microbiology
Seymour Wapner, Ph.D., Professor of Psychology and Chairman, Department of Psychology

Program

This new program begins with the 1974-75 academic year. It is being developed in response to the challenge of the period of change which is now being experienced in the relations between people and their environment. New relations require new concepts and reevaluated views of existing ones. Thus a new field of professional endeavors is opening dealing with people and their environment. The purpose of this program is to train students for entry-level professional positions into these expanding fields of environmental planning, management and education. The program will be flexible to accomodate the changes in the field so that it remains relevant in this dynamic world.

The Environmental Affairs Program is based upon the idea that a student's training should include substantive knowledge in an academic discipline, a group of undergraduate courses covering the concepts and tools necessary for working on environmental problems, an internship in an environmental agency and a one year graduate program involving a practicum, advanced courses in specialized areas, a capstone seminar and a major paper, usually based on the internship experience. Courses, seminars and studio work will be available from the program and other academic departments and new ones will be developed as the program, student interest and faculty involvement grow.

The central feature of the program is the relationship between the student and his advisor. The program will be held to a limited number of students so that a close advisor-student relationship can be maintained. In this way, the program can be tailored to the individual student's needs through the selection of undergraduate courses that complement the student's disciplinary training and provide a strong foundation for advanced training. Where listed courses do not meet a student's needs, special research projects and directed readings will be used to provide the necessary training. The internship normally will take place immediately after completion of the baccalaureate degree and before the commencement of graduate work, but the modular calendar will permit the internship to take place at other periods such as during the senior year or within the graduate training span. Students will be expected to take, in the two year undergraduate part of the program, 8 environmental program oriented courses, 4 or 5 courses in a related discipline and 3 or 4 elective courses. 8 courses will be required during the year of graduate study.

Admission

Because the program is a three year combined BA/MA program, students normally are admitted into the program at the beginning of their junior year. Although graduate students usually are not admitted to the program, exceptions may be possible in rare cases such as for junior professionals working in environmental agencies. Those entering the program with a bachelor's degree normally will require two years of study to complete the necessary course work.

Admission to the program is limited to approximately 15 students per year in order to maintain a close student-faculty relationship. Selection of persons for admission to the program is based upon an evaluation of the applicant's previous academic record and work experience, plus a personal interview with the admissions committee. In those cases where the interview requirement would impose an extreme hardship upon an applicant, a mutually satisfactory alternative may be possible.

Students desiring entry into the program should be able to present evidence of having successfully completed at least introductory course work in some of the following subjects: chemistry, biology, physics, statistics, computer programming, physical geography, cartography, economics, psychology, and political and social philosophy. Students who do not possess the prerequisites for their specialization are required to correct those deficiencies during the first year of the program.

Since admission to the program is highly restricted, interested students are urged to write as early as possible to the program director for a determination of their eligibility.

Undergraduate Coursework

As noted above, the undergraduate portion of the environmental affairs program emphasizes the acquisition of the tools and concepts that the student will need for this field. Although it is expected that all students will enroll in a group of courses which form the program's core, the particular skills and knowledge required will vary with the individual's abilities and interests. The actual program of any particular student will be the product of a continuing series of consultations with the faculty advisor. The five core courses common to all students which should be completed in the junior year are:

Undergraduate Core Courses (Required)

EA	201	Application of Systems Analyses to Environmental Problems.
EA	202	The Biosphere.
EA	203	Man's Perception of his Environment.
EA	204	Environmental Plans and Programs.
Geo	150	Aquarius.

Graduate Coursework

In the final year of the program, the student will concentrate on applying the skills acquired during the undergraduate portion of the program and on increasing his or her ability in the selected area of specialization. Three courses will form the core of the graduate part of the program.

Graduate Core Courses (Required)

EA	301	Institutional Innovation in Land, Water, Air Control.
EA	330	Practicum.
EA	340	Capstone Project.

Admission to the Graduate School is granted by the Dean of the Graduate School based upon the recommendation of the program director. Admission as a graduate student requires a minimum gradepoint average of 2.3 and favorable letters of recommendation. For tuition scholarship awards a gradepoint average of 2.7 is minimum. Applications for admission and scholarship are available at the Graduate School Office. The nature of the graduate degree is still under consideration.

Students may receive M.A.'s in specific disciplines that now offer graduate degrees (e.g. geography), and a new, interdisciplinary M.A. may become available.

Financial Aid

Several teaching assistantships and tuition remission scholarships are available for qualified applicants.

Professional Opportunities

Five major professional roles are envisioned in this program. Each represents a professional specialization that requires unique as well as common training within the program. These roles are as follows: Regional Environmental Planner
Land Resources Planner
Water Use Planner
Urban Environmental Monitor
Environmental Educator

Professional opportunities for such roles may be found in planning, government service, education, and public interest and civic organizations.

COURSES

Geography 150. AQUARIUS.

Refer to description under Geography.
Full course, Module 3-4. Staff.

201. APPLICATION OF SYSTEMS ANALYSES TO ENVIRONMENTAL PROBLEMS.

This course will discuss the fundamental concepts of systems analyses and their application to environmental problems. Stress will be on the use, applicability and limitations of this method in analyzing complex environmental systems and their physical, social and economic aspects. Prerequisite: Admission to environmental affairs program or instructor's consent.
Half course, Module 1. Mr. Schwarz.

202. THE BIOSPHERE.

Building on a foundation of general knowledge of physiology, genetics, taxonomy and ecology. The course will provide a biological context and perspective for the analyses and assessment of man-made environmental hazards. Prerequisite: Introductory course in biological science or concurrent registration in such course with instructor's consent.
Half course, Module 2. Mr. Reynolds.

203. MAN'S PERCEPTION OF HIS ENVIRONMENT.

An introduction to the study of environmental behavior. Examining man's reaction to environmental changes and natural and man-made hazards.
Half course, Module 3. Staff.

204. ENVIRONMENTAL PLANS AND PROGRAMS.

An overview of the planning process with special emphasis on plans and programs in the New England region. Plans and programs now current are examined and their logic and history discussed.
Half course, Module 4. Mr. Schwarz.

250. PRACTICAL PROBLEMS IN ENVIRONMENTAL AFFAIRS.

This is a work-study course. Students will work four full (eight hour) days in an environmental agency in the Worcester-Boston area or spend equivalent time on a project at the University. Also, weekly seminars at the University will review and evaluate work experiences. Grades will be awarded on the basis of the student's accomplishment in internship posts and seminars. Does not substitute for required program internship. Prerequisite: consent of the instructor.
Double course, Module 5. Staff.

300. READINGS IN ENVIRONMENTAL AFFAIRS.

Directed reading for graduate students in an area of their choice. Consent of instructor required.
Variable credit. Staff.

330. PRACTICUM IN ENVIRONMENTAL AFFAIRS.

Individual or small groups of students will be working on real world problems. Emphasis in this studio course will be on practical problem solving.

Full course, Module 3-4. Mr. Schwarz.

Geography 357. REGIONAL WATER RESOURCES PLANNING.

Not offered, 1974-75.

Refer to description under Geography.

Full course. Mr. Schwarz.

INTERNATIONAL DEVELOPMENT AND SOCIAL CHANGE

Participating Faculty

Leonard Berry, Ph.D., Program Director and Professor of Geography

Richard Ford, Ph.D., Assistant Program Director and Associate Professor of Comparative History

Marvin A. D'Lugo, Ph.D., Assistant Professor of Spanish

Cynthia Enloe, Ph.D., Associate Professor of Government and International Relations

Stanford N. Gerber, Ph.D., Associate Professor of Social Anthropology and Sociology

Allen E. Goodman, Ph.D., Associate Professor of Government and International Relations and Chairman, Department of Government and International Relations

Alan F. Gummerson, Ph D., Assistant Professor of Economics

Richard A. Howard, Ph.D., Assistant Professor of Geography and Adjunct in Biology

Robert C. Hsu, Ph.D., Assistant Professor of Economics

Robert W. Kates, Ph.D., Professor of Geography

Sharon P. Krefetz, Ph.D., Assistant Professor of Government, Director of Interdisciplinary Studies

Ivory T. Robinson, Ph.D., Assistant Professor of Government and International Relations

Ann T. Schulz, Ph.D., Visiting Professor of Government and International Relations

Theodore H. Von Laue, Ph.D., Jacob and Frances Hiatt Professor of History and Chairman, Department of History

Program

The Program in International Development and Social Change is one of the BA/MA offerings. Academic year 1974-75 will be the program's first formal year. It will be a year of transition, experimentation, and evaluation.

The program is designed to prepare students for careers and participation in international fields. It will attempt to orient majors to the changing world in which we live and to the increasing role which developing societies play in the interdependencies of the world's social, economic, and political systems. The Program also hopes to attract a wide range of non-majors in one or more of the courses, seminars, or action-research activities.

A new program in development, launched at a time of disillusionment and widespread doubt about progress in international development, requires special explanation. It does not seek to train agricultural specialists, highway design engineers, or sanitation system contractors. Nor do we expect the majority of our graduates to work for the established international agencies such as US-AID, Care, or the United Nations. Rather, we assume that graduates will acquire basic skills of economic and social analysis as well as an orientation toward development and social change. These skills and attitudes will be well suited for any number of careers in either the private or public sector which deal with developing areas of the world.

To attain these skills, it seems best to work within a combined graduate-undergraduate setting which blends the advantages of the liberal arts with the virtues of professional training. Thus, the curriculum combines existing courses, new cross-disciplinary courses, an internship, a basic research project, and an applied research activity.

Expectations: The Program has established five expectations for its majors:

. . . master basic skills including competence in a foreign language, statistical and computer skills, and techniques of economic and social analysis

. . . attain an understanding of the development process in its political, economic, historical, and environmental aspects

. . . develop an investigation/research approach to an actual problem and to test the growing body of theoretical knowledge in an internship experience

. . . wrestle with the problem of hammering out a philosophy of development

. . . pursue a career track, selected from one of three existing options—development management, development planning, development education, or a modified form of one of these tracks.

Course Selection

The academic year 1974-75 is one of transition for the Program. Most course selections will be a matter of individual discussion with faculty in International Development. Because Program enrollment will be small, close conversations with faculty are encouraged.

For next year, four different categories of courses will be available, all concerned with work at the sophomore and junior levels.

Prerequisites: All students should make certain that prerequisites are completed. One prerequisite requires that students complete Principles of Economics (Economics 10 and Economics 11). If students have not done so already, they should take these courses as soon as possible. The second prerequisite is Foreign Language competence. Students should discuss with a faculty member the specific interests which they have for the program and on that basis, determine which language proficiency would be most helpful for them. Language proficiency can be demonstrated either through proven competence or course work equivalent.

Core Courses: The second category of courses offered in international development will be core courses.

Geography 125, Government 125, History 288. DEVELOPMENT PROBLEMS.

Mr. Berry, Ms. Schulz, Mr. Ford.

AUTOBIOGRAPHY (to be offered during the third and fourth modules).

Staff.

GOVERNMENT 287. SURVEY RESEARCH AND DATA ANALYSIS.

Ms. Krefetz.

ECONOMICS 228. ECONOMICS AND DEVELOPMENT.

Ms. Hsu.

GEOGRAPHY 110a. INTRODUCTION TO STATISTICAL GEOGRAPHY.

Mr. Howard.

GEOGRAPHY 212b. COMPUTER PROGRAMMING.

Mr. Howard.

Track Courses: Two tracks (Development Planning and Development Education) for specialized career training are now available. A third track in Development Management is in preparation.

For the Development Planning track, students will take three basic courses (one in Resource Planning, another in Economic Planning, and a third in Political/Administrative Planning) plus four courses subsumed under one of these three headings.

For the Development Education track, students will take three basic courses (Education as an Agent of Social Change, Development Education, and Educational Psychology) plus four courses in a teaching certification track in the social sciences. At a later date, the Program hopes to develop a parallel track for educational researchers but it will not be available next year.

For details of the rationale and full requirements for the track sequences, consult the faculty or obtain a copy of the International Development "Program Design".

Related Courses: Majors in the Program for International Development will take a series of area study courses and related courses. The details for these requirements are spelled out in the "Program Design" which is available from the International Development Office. The following diagram is taken from that Program Design and should help explain the relationship of individual courses to the program as a whole.

Model Schedule
BA/MA program in International Development

SOPHOMORE

1. core-skill Social Science Methods
2. core-orientation Issues of development
3. prerequisite or elective or area study
4. prerequisite or elective or area study
5. core-skill Statistics
6. core-orientation Biography Seminar
7. track
8. prerequisite or elective or area study

JUNIOR

1. core-skill Economic Development
2. track
3. elective or area study

4. elective or area study
5. core-skill Programming
6. track
7. track
8. elective or area study

SENIOR/GRADUATE

1. track
2. track
3. elective or area study
4. elective or area study (Grad.)
5. core-seminar Workshop (Grad.)
6. core-seminar Workshop (Grad.)
7. elective or area study
8. elective areas of study (Grad.)

INTERNSHIP
GRADUATE

1. core - research thesis
2. core - The Literature of Development
3. core - Applied Development Problems
4. core - Post-Internship Seminar
5. core - research thesis
6. core - The Literature of Development
7. core - Applied Development Problems
8. core - A Philosophy of Development

DEPARTMENTS AND COURSES

ASTRONOMY

A single course is available at the introductory level. Advanced topics directly relating to astronomy are listed under Physics. Students interested in advanced work in Astronomy should consult with the instructor or the Physics Undergraduate Advisor.

1. EXPLORING THE UNIVERSE.

This course is explicitly designed for the non-science major who wishes to learn about the stars. It is also intended to provide for the interests of the student who seeks an acquaintance with the concepts and methods of science but who does not wish the detail found in the traditional introductory science survey course. Topics considered are interdisciplinary in character since astronomy involves physics, chemistry, biology and geology. The use of mathematics is minimized; only simple algebra is utilized. The first half of the course is devoted to consideration of the planets and the sun. In the second half of the course, the stars, their life cycles, and the galaxies are studied. Theories of the composition and origin of the solar system, of the Universe and of life are explored. The heavens are best understood by making direct observations of celestial objects. Emphasis is therefore placed on the making, analyzing and reporting of observations on the moon, sun (including sunspots), planets, meteors, stars, variable stars, nebulas, and galaxies. Students make these observations using telescopes in the University Observatory as well as on several night field trips.

Full course, Modules 1-2. Dr. Andersen.

BIOLOGY

DEPARTMENT FACULTY

Rudolph F. Nunnemacher, Ph.D., Professor of Zoology, Department Chairman
Vernon Ahmadjian, Ph.D., Professor of Botany
John J. Brink, Ph.D., Professor of Biochemistry
Joseph C. Curtis, Ph.D., Professor of Zoology
John T. Reynolds, Ph.D., Professor of Microbiology
H. William Johansen, Ph.D., Associate Professor of Botany
Robert G. Sherman, Ph.D., Associate Professor of Physiology
Nicholas S. Thompson, Ph.D., Associate Professor of Psychology and Adjunct Associate Professor of Biology
Richard A. Howard, Ph.D., Assistant Professor of Geography and Adjunct in Biology
Timothy A. Lyerla, Ph.D., Assistant Professor of Developmental Genetics
Samuel E. Johnson, Ph.D., Assistant Professor of Zoology

Margaret E. Anderson-Olivo, Ph.D., Assistant Professor (Affiliate) of Physiology
George Camougis, Ph.D., Professor (Affiliate) of Physiology
Fred Fay, M.D., Associate Professor (Affiliate) of Physiology
Ian D.K. Halkerston, Ph.D., Professor (Affiliate) of Endocrinology
Harry L. Jacobs, Ph.D., Associate Professor (Affiliate) of Physiology
Warren Litsky, Ph.D., Professor (Affiliate) of Microbiology
Fernand G. Peron, Ph.D., Professor (Affiliate) of Biochemistry
Harris Rosenkrantz, Ph.D., Professor (Affiliate) of Biochemistry

UNDERGRADUATE PROGRAM

Two majors are available. Type A is most suitable for those intending to apply for graduate studies in biology, medicine, dentistry, etc. This program is more prescribed and courses in the major must be taken for the letter grades. The Type B major allows the student to take a selection of courses in related fields of his own choosing but subject to departmental approval. It is particularly suitable for those with interests spanning several departments. Courses in related fields, as indicated below, may be taken on a Pass-No Record option for the Type B major only.

A Departmental Major Type A must take 8 courses in biology of which 6 must be in courses more advanced than the introductory course. However, only 2 of the 6 courses may be in directed research, directed readings or in a seminar course. The "introductory biology year course" will be prerequisite for all other courses in biology, but students must fulfill prescribed prerequisites for specific courses.

The Type A major must take, in related fields, a year of general Chemistry, a year of introductory Physics, and at least one additional year course in chemistry, physics, or geology including in each case the laboratory for a total of 6 semester or three year courses. Additionally, the Type A major must take a full year of the Calculus (Mathematics 12 or 15). None of the aforementioned courses may be taken on a "pass-no record" option.

A Type B major must take 8 courses (for letter grades) in biology of which 6 courses must be in courses more advanced than the introductory course. Only 2 of the 6 courses may be in directed research, directed readings or in a seminar course. In related fields the Type B major must take a year of general Chemistry, including laboratory, and 4 additional courses chosen from Chemistry; Computer Science; English 214 (Darwinism); Geology; Mathematics; Philosophy 17 (Philos. of Science); Physics; Psychology 222a, b (Physiology of Behavior); 224 (Human Behavior and Nervous System Functioning); 229b (Advanced Practicum in Physiological Psychology); Sociology 12a (Social Anthropology); or any other relevant courses approved by petition.

At least 10 courses of a major's program (Type A or B) must be taken from courses outside the field of biology, chemistry, geology, mathematics, physics, and must not include any of the courses specified in the preceding paragraphs.

The Department strongly advises all majors to select and consult with an advisor for obtaining the maximum benefits which the department has to offer.

HONORS PROGRAM

An Honors Program is available to especially well qualified majors and requires the student to engage in an independent research project during the senior year together with meeting other departmental requirements, i.e., a broad distribution of courses, quality grades, and an honors thesis and examination. Frequently the Honors Project is the continuation of research during the summer.

GRADUATE PROGRAM

The department offers courses leading to Master of Arts and Doctor of Philosophy degrees in specialized phases of bacteriology, biochemistry, botany, cytology, embryology, genetics, marine biology, physiology and zoology. Admission to the graduate program assumes adequate preparation in the basic sciences, an overall undergraduate record of B or better, and satisfactory standing in the Graduate Record Examination. Tuition scholarships and Teaching Assistantships are available. Detailed information can be obtained from the department chairman.

MASTER OF ARTS

The program usually requires three or four semesters of academic work and includes teaching experience and research culminating in an acceptable thesis.

DOCTOR OF PHILOSOPHY

The requirements are identical with those of the University and can be found in the catalog section on The Graduate School and includes teaching experience. The student's program is planned according to his needs with his program director.

PROGRAM IN BIOMEDICAL ENGINEERING

The Program in Biomedical Engineering is a graduate program under the joint sponsorship of Clark University and Worcester Polytechnic Institute. The aim of the program is to combine the resources of the two institutions to provide special education in this rapidly developing interdisciplinary area. Students entering the program must have a bachelor's degree in mathematics or one of the basic or engineering sciences. The master's program will include a minimum of five full courses taken at both institutions. All students will be expected to achieve some basic knowledge in biology, chemistry, engineering, mathematics and physics. Since a thesis on research is also required, the program will normally require at least two years of study. In general, the requirements for the degree will be consistent with the requirements for a master's or doctoral degree at both institutions. The detailed requirements for each student will be worked out by a Committee on Biomedical Engineering made up of faculty members from both institutions. Students enrolled at Clark will receive an M.A. or Ph.D. in Biology, the actual degree noting the cooperation of W.P.I. Conversely, students enrolled in the first instance at W.P.I. will receive the M.S. or Ph.D. in Biomedical Engineering, with the cooperation of Clark, indicated on the degree.

For further information, write to: The Director, Biomedical Engineering Program, Clark University, Worcester, Massachusetts 01610.

COURSES

101. PALEO-ZOOLOGY.

An interdepartmental course in geology and biology combining a systematic survey of the morphology, taxonomy, and geologic history of groups of animals commonly found as fossils with their evolution to present-day forms. Three lectures and one laboratory period per week including field trips.

Full course, Modules 3-4. Mr. Nunnemacher.

105. BIOLOGY AND MAN.

An introductory survey course for non-majors. Three lectures per week.

Full course, Modules 1-2. Mr. Nunnemacher

108. PRINCIPLES OF BIOLOGY.

A year course serving as an introduction to all advanced courses in biology. Required of all biology majors. May be entered in the Fall semester or module 3. Three lectures and one laboratory period per week.

Two courses through the year.

Full course, Modules 1-2. Staff.

Full course, Modules 3-4.

109. MICROBIOLOGY.

A survey of the protists (with emphasis on the bacteria), their activities and the methods by which they are studied. Three lectures and three hours of laboratory work per week (limited to 40 students).

Full course, Modules 1-2. Mr. Reynolds.

110. BOTANY. Not offered, 1974-75.

A survey of the taxonomy, structure, and physiology of plants. Three lectures and one laboratory period per week.

Full course. Mr. Johansen.

111. ZOOLOGY. Not offered, 1974-75.

A survey treating the evolution of the major animal phyla with emphasis on structural and functional adaptations, and principles of ecology. Three lectures and one laboratory period per week. (Alternates with Bio. 101)

Full course. Mr. Nunnemacher.

112. COMPARATIVE ANATOMY.

A comparative study of the morphology of the vertebrates with emphasis on the evolution of animals from fish to man. Prerequisite: 108. Two lectures and two laboratory periods per week.

Full course, Modules 1-2. Mr. Nunnemacher.

113. ALGAE AND FUNGI.

Not offered, 1974-75.

Representative examples of the major groups of algae and fungi are studied with emphasis on their structure, interrelationships and adaptation to their environment. Prerequisite: A course in botany or consent of instructor. Two three-hour lecture-laboratory periods per week.

Full course. Mr. Johansen.

114. PHYCOLOGY.

Not offered, 1974-75.

The structure, function and interrelationships of fresh-water and marine algae will be studied with a view to understanding their role in the biosphere. Prerequisite: A course in botany or consent of the instructor. Three lectures and one laboratory period per week.

Full course. Mr. Johansen.

115. FLOWERING PLANTS.

An introduction to the classification, evolution, ecology, and economic importance of flowering plants, with emphasis on the New England flora. Ferns, fern-allies and gymnosperms will also be included. Short field trips will be made to nearby areas for examination of the spring flora. A collection of plants will be encouraged but not required. One three-hour lecture-laboratory period per week.

Full course, Modules 3-4. Mr. Ahmadjian.

116. PLANTS AND MAN.

A course exploring the plants and plant products that have helped shape the development of man. Included will be cereal crops, forests and forest products, beneficial and harmful fungi, selective breeding of useful plants, historical aspects of agriculture, useful and destructive aquatic plants, noncereal food plants, drugs and medicinal plants, and future food supplies.

Full course, Modules 3-4. Mr. Johansen.

117. PRINCIPLES OF ECOLOGY.

A course in basic ecological theory governing organism-environment interrelationships. Population dynamics, energy flow, zoogeography, community ecology, as well as ecological methods and environmental problems will be included. Three lectures per week.

Full course, Modules 1-2. Mr. Johnson.

118. GENETICS.

Principles and problems of genetics.

Full course, Modules 1-2. Mr. Lyerla.

119. EXPERIMENTAL GENETICS.

Concurrent with 118. One laboratory period per week.

Full course, Modules 1-2. Mr. Lyerla.

120. HISTOLOGY.

The microscopic anatomy of tissues and organs of mammals. Prerequisite: 112. Two lectures and two laboratory periods per week.

Full course, Modules 3-4. Mr. Nunnemacher.

121. MICROTECHNIQUE.

A laboratory course in the preparation of histological sections. Three afternoons a week or the equivalent.

Full course, Modules 3-4. Mr. Nunnemacher.

137. CELLULAR BIOLOGY.

The cell as a structural and functional unit. Introduction to the physiochemical properties and metabolic roles of molecules and macromolecules of cellular origin. Discussion of the roles of the nucleus and cytoplasm in the regulation of cellular processes. Three lectures per week. Prerequisite: Biology 108 or consent of instructor.

Full course, Modules 3-4. Mr. Curtis.

170. HUMAN NUTRITION.

Full course, Module 5. Mr. Brink.

182. PRIMATE SOCIAL BEHAVIOR AND HUMAN EVOLUTION.

Not offered 1974-75.

The study of the social behavior of monkeys and apes highlights central problems in psychological, zoological, and anthropolical approaches to behavior. It also has important implications for the past evolution and present nature of man's sociality (see Psychology 256).

Full course, Modules 1-2. Mr. Thompson.

182. PRINCIPLES OF BEHAVIORAL EVOLUTION.

From a broad survey of the social systems of animals, this course will attempt to distill the general principles that have directed the evolution of animal behavior. (See Psychology 246).
Full course, Modules 3-4. Mr. Thompson.

212. SEMINAR IN PLANT ECOLOGY.

Interactions between plants and their physical and biological environments. Prerequisite: 110 and 117 or consent of instructor.
Full course, Modules 3-4. Mr. Johansen.

213. PLANT PHYSIOLOGY.

Not offered, 1974-75.

An introduction to the function and chemistry of plants. Three lectures, one laboratory period per week. Prerequisite: one course in botany and one in chemistry.
Full course Mr. Brink, Mr. Johansen.

214. SEMINAR IN PHYCOLOGY.

Selected topics dealing with algae from the structural, physiological or ecological points of view. Prerequisite: 110 and 113 or consent of instructor.
Full course, Modules 3-4. Mr. Johansen.

215. INVERTEBRATE ZOOLOGY.

Not offered, 1974-75.

A detailed survey on the diversity of invertebrates. Anatomical and histological examination of selected types, concepts of evolution and speciation. Prerequisite: two semesters of biology or consent of instructor. Two lectures and two laboratory periods per week.
Full course. Mr. Johnson.

216. FIELD ECOLOGY.

An introduction to ecological methods involving studies of both aquatic and terrestrial habitats. Prerequisite: Biology 117 or permission. Two lectures and two laboratories per week.
Full course, Modules 1-2. Mr. Johnson.

217. MARINE BIOLOGY.

An introduction to the marine ecosystem in relation to physical, chemical, geological and biological factors. Two lectures per week. Prerequisite: Biology 117 and consent of instructor.
Full course, Modules 3-4. Mr. Johnson.

219. LABORATORY IN ETHOLOGY.

An introduction to observational techniques and the study of human and animal subjects. Consent of the instructor.
Full course, Module 5. Mr. Thompson.

221. EMBRYOLOGY.

Consideration of the fundamentals of vertebrate embryology. Three lectures and one laboratory period per week. Prerequisite: Biology 112 or consent of instructor.
Full course, Modules 3-4. Mr. Lyerla.

224. NEUROANATOMY.

The structural and functional organization of the central nervous system of man. Prerequisite: Biology 112 or consent of instructor. Three lectures per week.
Full course, Modules 3-4. Mr. Nunnemacher.

225. ELECTRON MICROSCOPY.

Introduction to the principles of electron optics, use of the electron microscope, preparation of specimens and the techniques of electron microscopy applicable to biological investigations. Two lectures and two laboratory periods per week. Prerequisite: permission of the instructor.
Full course, Modules 1-2. Mr. Curtis.

228.1 DEVELOPMENTAL GENETICS.

A survey of modern concepts concerning genetic control of differentiation and development. Discussions emphasize primarily metabolic controls of differential protein sythesis leading to novel cellular phenotypes in organisms from bacteriophage to man. Prerequisite: 118 or consent of instructor.
Half course, Module 3. Mr. Lyerla.

228.2 SEMINAR IN DEVELOPMENTAL GENETICS.

Prerequisite: Biology 228.1
Half course, Module 4. Mr. Lyerla.

230. BIOLOGY: THE STATE OF THE ART.

A seminar for seniors and beginning graduate students who are interested in assessing the progress that had been made in approaching the outstanding questions in the biological sciences. Permission of instructor required. Two 75 minute meetings per week.
Full course, Modules 1-2. Mr. Reynolds.

232. SELECTED TOPICS IN BACTERIOLOGY.

A seminar for advanced undergraduates and beginning graduate students. Prerequisite: Biology 108 and consent of instructor. Two 75 minute meetings per week. SPECIAL PROBLEMS (260) may be taken concurrently for additional variable credit.
Full course, Modules 3-4. Mr. Reynolds.

235. SEMINAR IN CELLULAR BIOLOGY.

Prerequisite: Biology 137 or consent of instructor.
Full course, Module 1-2. Mr. Curtis.

239. BIOLOGICAL SYSTEMS AND WATER POLLUTION CONTROL.

An attempt to deal with those problems associated with water pollution that are amenable to solution through the application of concepts and approaches of the biological sciences. The participants do not have to be biology majors, but will be expected to be literate in one or more of the scientific disciplines. Permission of the instructor required. Two 75 minute meetings per week. Bio. 260 - SPECIAL PROBLEMS - may be taken concurrently for additional variable credit.
Full course, Modules 3-4. Mr. Reynolds.

240. GENERAL ANIMAL PHYSIOLOGY.

Introduction to the principles underlying physiological functions common to living organisms. The course covers the subcellular, cellular, and organ levels of organization and places a primary emphasis on mammals. Prerequisites: Introduction to Biology and Organic Chemistry. Three lectures and one laboratory per week.
Full course, Modules 1-2. Mr. Sherman.

242. COMPARATIVE ANIMAL PHYSIOLOGY.

Not offered, 1974-75.
Full course. Mr. Sherman.

247. SEMINAR IN NEUROPHYSIOLOGY.

A seminar on the principles of transmission, integration and storage of information in neuronal pathways and other considerations of the nervous system. Prerequisite: A course in neurophysiology or its equivalent or consent of the instructor.
Full course, Modules 1-2. Mr. Sherman.

249. PRINCIPLES OF NEUROPHYSIOLOGY.

Physiology of central and peripheral nervous systems, receptors and muscles, considered in both vertebrates and invertebrates. Three lectures and one laboratory period per week. Prerequisite: Biology 240 or consent of the instructor.
Full course, Modules 3-4. Mr. Sherman.

250. PRINCIPLES OF APPLIED IMMUNOLOGY.

Not offered, 1974-75.
An introduction to the basic principles, problems and theories concerning the immunological behavior of man and the animal kingdom, familiarizing the student with the experimental evidence upon which are based the present concepts of immune mechanisms. The course is oriented to demonstrate the basic methods of experimental immunology and the application of such methods to biological problems.
Full course. Dr. Rosenkrantz.

260. DIRECTED RESEARCH.

Advanced semi-independent study of an approved topic under the direction of a departmental member. Consent of instructor required. Required for honors in biology.
Variable credit.
Modules 1-2-3-4-5. Staff.

261. DIRECTED READINGS.

Advanced readings on an approved topic under the direction of a departmental member. Consent of the instructor required.
Variable credit.
Modules 1-2-3-4-5. Staff.

268. PRINCIPLES OF PHARMACOLOGY.

Not offered, 1974-75.

This course is intended to acquaint the student or research worker with established principles and the more important phenomena involved in the study of pharmacology. Particular emphasis is placed on the quantitative aspects of the interaction of chemical compounds or drugs with biological systems. The principal pharmacological actions of several important drugs are illustrated.
Full course. Staff.

270. BIOCHEMISTRY.

The principles of mechanisms of biochemical reactions in an understanding of the metabolism of foodstuffs and the role of enzymes, nucleic acids and hormones. An acquaintance with the instrumentation in biochemical research will be presented. Prerequisite: Chemistry 130. Three lectures, one laboratory per week, through the year.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Brink.

271. BIOCHEMISTRY OF NUCLEIC ACIDS.

The chemical and physical properties of RNA and DNA derived from various sources will be considered with respect to their isolation, separation and characteristics. The functional role and biological significance of the nucleic acids in subcellular organelles will be examined. Prerequisite: Biology 270 or consent of instructor.
Full course, Modules 3-4. Mr. Brink.

273. NEUROCHEMISTRY.

The metabolic aspects of brain amines and biopolymers will be considered in relation to neural function. Effects of drugs on memory processes will be discussed in terms of biochemical mechanisms. Prerequisite: Biochemistry 270 or consent of instructor.
Full course, Modules 3-4 Mr. Brink.

280. THE HISTORY AND PRESENT STATUS OF INSTINCT.

Not offered, 1974-75.

It has long been argued and long contested that man and animal alike are guided in their social behavior by innate tendencies. This offering will emphasize the devious and irrational course of progress in a scientific field of study so loaded with social and philosophic implications. Permission of the instructor. (See Psychology 260).
Full course. Mr. Thompson

291. QUANTITATIVE METHODS FOR BIOLOGY.

Not offered, 1974-75.

Elements of statistical methods will be stressed. These will include hypothesis testing, design, and sampling. Also a brief introduction to computer programming and model building techniques will be included.
Full course. Mr. Howard.

295. FOREST RESOURCE MANAGEMENT.

Refer to description under Geography 241.
Half course, Module 1. Mr. Howard.

296. COMPUTER PROGRAMMING.

Refer to description under Geography 212.
Mr. Howard.

300. READINGS AND RESEARCH IN BIOLOGY.

Variable credit.
Modules 1-2-3-4-5. Staff.

310. SCIENTIFIC WRITING FOR GRADUATE STUDENTS.

An introduction to the techniques of writing scientific papers. The principal assignment will be the writing of a journal article and a detailed analysis of the steps involved. Related areas which will be covered include searching the scientific literature, handling of quantitative data relevant to biological systems, and oral presentation of a scientific paper. Prerequisite: permission of the instructor.
Full course, Modules 1-2. Mr. Ahmadjian.

317. MICROCLIMATOLOGY AND BIOMETEOROLOGY.

An introduction to the quantitative analysis of organism-environment interactions.
Full course, Modules 3-4. Mr. Johnson.

325. SEMINAR IN ULTRASTRUCTURE.

Not offered, 1974-75.

Discussion of the structure of macromolecules and subcellular organelles in relation to their biological functions. Evidence obtained by a variety of physical and chemical methods will be considered, particular emphasis being placed on electron microscopic studies. Consent of instructor required.
Full course. Mr. Curtis.

332. SEMINAR IN BACTERIOLOGY.

Not offered, 1974-75.

Selected topics in bacterial ecology and physiology. Consent of instructor required.
Full course. Mr. Reynolds.

334. SEMINAR IN BEHAVIOR AND EVOLUTION.

A consideration of contemporary issues in the phylogeny and ontogeny of behavior in general and social behavior in particular. (See Psychology 334).
Full course, Modules 3-4. Mr. Thompson.

335. SEMINAR IN ENVIRONMENTAL SYSTEMS.

Not offered, 1974-75.

Systems analysis and models related to environmental management. Programming experience required.
Full course, Modules 3-4. Mr. Howard.

341. SEMINAR IN ENDOCRINOLOGY.

Half course, Module 1. Mr. Curtis.

342. RESEARCH IN ENDOCRINOLOGY.

Half course, Module 2. Mr. Curtis.

346. SYNAPTIC TRANSMISSION.

The electrophysiology, ultrastructure and pharmacology of chemical and electrical synapses. Current information and theories of synaptic transmission as well as the role of synapses in neural integration will be examined.
Half course, Module 1. Mr. Sherman.

347. CENTRAL NERVOUS SYSTEM.

The functional organization and physiology of selected neural networks in the central nervous system of certain vertebrate and invertebrate animals. Neuronal systems will include the cerebellum, cerebral cortex and spinal cord of mammals and the central ganglia of molluscs and arthropods. In these discussions, the role of command fibers and central oscillators in initiating stereotyped behaviors and biological rhythms in lower animals will be examined.
Half course, Module 2. Mr. Sherman.

350. GRADUATE SEMINAR.

Full course, Modules 1-2
Full course, Modules 3-4. Staff.

360. MASTER'S THESIS

Variable credit.
Modules 1-2-3-4-5. Staff.

390. DOCTORAL DISSERTATION

Variable credit.
Modules 1-2-3-4-5. Staff.

CHEMISTRY

DEPARTMENT FACULTY

Harry C. Allen, Jr., Ph.D., Professor of Chemistry, Department Chairman
Marcel Gut, Ph.D., Professor (Affiliate) of Chemistry

Edward N. Trachtenberg, Ph.D., Professor of Chemistry
Wen-Yang Wen, Ph.D., Professor of Chemistry
Daeg S. Brenner, Ph.D., Associate Professor of Chemistry
Karen L. Erickson, Ph.D., Associate Professor of Chemistry
Paul T. Inglefield, Ph.D., Assistant Professor of Chemistry
Alan A. Jones, Ph.D., Assistant Professor of Chemistry
Elias Meymaris, Ph.D., Assistant Professor (Affiliate) of Chemistry
Thomas A. Wittstruck, Ph.D., Assistant Professor of Chemistry

UNDERGRADUATE PROGRAM

The requirements for the chemistry major are two courses in mathematics beyond Mathematics 11, two courses in physics (Physics 12 and 19), and eight courses in chemistry and related fields beyond Chemistry 12, 100b or 102b. These must include:

Course	*Number*	*Course Credit*
Organic Chemistry	130 or 132	2
Inorganic Chemistry	150	1
Physical Chemistry I	160	1
Physical Chemistry II or	162	
Biophysical Chemistry	164	1
Analytical Chemistry or	170	
Environmental Chemistry	172	1
		Total 6

The remaining two-course requirement may be met either by advanced chemistry courses or, with the permission of the Chemistry Department, by appropriate courses in mathematics, physics and biology.

Students wishing to be accredited by the American Chemical Society should consult the department chairman with regard to specific course requirements.

Students planning graduate study in chemistry are urged to take Chemistry 135, 200, 230 and/or advanced mathematics, physics and biochemistry courses, depending on the area of interest. A reading knowledge of German, French or Russian is also recommended. All chemistry majors are encouraged to undertake independent research projects either as a candidate for honors (Chemistry 215) or in a special projects course (Chemistry 214) and may do so after completing Chemistry 160.

A student may elect as his/her first course in Chemistry—Chemistry 10, 12, 100, 102, 130 or 132. The decision to start with Chemistry 12, 130 or 132 (all accelerating options) must be made in consultation with the department and may require taking a placement examination offered at the beginning of the academic year.

GRADUATE PROGRAM

The department offers programs leading to the degrees of Master of Arts and Doctor of Philosophy with specialization in various fields of chemistry and in chemical physics. Emphasis is placed on tailoring programs to fit the specific needs and desires of the graduate student. To facilitate this goal, a committee of interested faculty works with each student to advise and review his/her progress in research work and together with the student defines the formal course work requirements. In the case of Master's degree candidates, the requirements are essentially those of the University as stated elsewhere in the catalog. Up to one year's equivalent of teaching apprenticeship will be required of all candidates for advanced degrees.

In addition to formal course work, the student must pass qualifying and preliminary examinations, and the department language requirement must be met. For further details, the appropriate departmental publications should be consulted.

Graduate scholarships, teaching assistantships and research fellowships are available. Further information on these awards may be obtained from the department chairman.

COURSES

10. CHEMISTRY FOR NON-SCIENCE MAJORS.

This one semester, relatively non-mathematical course on the fundamentals of chemistry is intended to develop a qualitative feeling about chemistry and its role in the modern world. Although not designed for science majors, students who do develop a deeper interest in chemistry can, without loss of time, enter Chemistry 12 or Chemistry 132 (with the extra recitation). Three lectures and one 3-hour laboratory per week.
Full course, Modules 1-2. Mr. Wittstruck.

12. FUNDAMENTALS OF CHEMISTRY.

This mathematical course on the major principles of chemistry, which is at the same level of sophistication as Chemistry 100 or 102, is designed to accelerate students whose high school background in chemistry and mathematics is sufficiently good so that they do not require a full year of General Chemistry in order to qualify for Organic Chemistry. Three lectures and one 4-hour laboratory per week.

Full course, Modules 1-2. Mr. Brenner.

100. INTRODUCTORY CHEMISTRY.

This systematic study of the elements and their principal compounds and of the fundamental laws and theories of chemistry is designed as an introduction to the field of chemistry. A knowledge of high school algebra is necessary; high school chemistry and physics, though helpful, are not required. This course is designed to meet the needs of chemistry majors, students interested in biology, physics, medicine and dentistry as well as those seeking a knowledge of chemistry as part of their liberal arts education. Three lectures, one recitation and one 4-hour laboratory per week. Two lecture sections with enrollment in each limited to 65.

Full course, Modules 1-2. Mr. Inglefield, Mr. Trachtenberg.
Full course, Modules 3-4.

102. INTRODUCTORY CHEMISTRY.

This course is identical to Chemistry 100 except that it will meet for three lectures, one recitation and one 4-hour laboratory per week during Modules 3-4 and for six lectures, two recitations and two 4-hour laboratories per week during Module 5. Enrollment limited to 65.

Full course, Modules 3-4.
Full course, Module 5. Mr. Brenner.

130. ORGANIC CHEMISTRY.

The lectures emphasize the synthesis and reactions of organic compounds, structure determination and reaction mechanisms. The laboratory concentrates on the preparation and physical, spectral, and chemical properties of important classes of organic compounds. Prerequisite: Chemistry 12 or 100 or 102 or advanced placement. Three lectures and one 4-hour laboratory per week.

Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Erickson.

132. ORGANIC CHEMISTRY.

This course is identical to Chemistry 130 except that it is also open to students who either almost qualify for advanced placement on the basis of examination or who have completed Chemistry 10. Students in these categories must attend an additional recitation each week during which topics in general chemistry will be reviewed; other students may also attend these recitations if they wish. Three lectures and one 4-hour laboratory per week during Modules 3-4 and six lectures and two 4-hour laboratories per week during Module 5.

Full course, Modules 3-4
Full course, Module 5. Mr. Trachtenberg.

135. QUALITATIVE ORGANIC ANALYSIS.

This laboratory study of the identification of organic compounds utilizes both classical and modern instrumental techniques. Prerequisite: Chemistry 130 or 132 or consent of the instructor. One hour conference and seven hours of laboratory per week.

Full course, Modules 1-2 Ms. Erickson.

140. ANALYTICAL CHEMISTRY.

This course covers both the theoretical principles and technical methods employed in determining the qualitative and quantitative composition of matter. Laboratory options are offered for those students whose primary interest is in molecules of a clinical or biological nature as well as for those students whose primary interest is in more classical chemistry itself. Pre- or corequisite: Chemistry 162.

Full course, Modules 3-4. Mr. Jones.

142. ENVIRONMENTAL CHEMISTRY.

This study focuses on the chemistry related to environmental problems such as air and water pollution from fossil fuels, pesticides, metals, food additives and solid wastes. The laboratory primarily will make use of analytical techniques. Prerequisites: Chemistry 130 or Chemistry 132. Three lectures and one laboratory per week.

Full course, Modules 1-2. Mr. Jones.

150. INORGANIC CHEMISTRY.

Included in this descriptive chemistry of the elements are such

topics as acid-base theory and ligand field theory. Prerequisite: Chemistry 12, 100 or 102 or equivalent. Two lectures and one 4-hour laboratory per week.
Full course, Modules 3-4. Mr. Allen.

160. PHYSICAL CHEMISTRY I.

The lectures cover principles of physical chemistry applied to gases, liquids and solids; chemical thermodynamics; solution chemistry. The laboratory includes experiments in physical chemistry techniques of measurement and technical report writing. Prerequisite: Mathematics 12 and either Chemistry 12, 100 or 102. Chemistry 130 or 132 is suggested as a pre- or corequisite. Pre- or corequisite: Physics 12 or a strong high school background in physics and enrollment in the recitation part of this course. Three lectures, one 4-hour laboratory and one optional recitation per week.
Full course, Modules 1-2. Mr. Wen.

162. PHYSICAL CHEMISTRY II.

The topics covered in this continued discussion of the principles of physical chemistry are electrode processes, chemical kinetics and atomic and molecular spectroscopy. Prerequisite: Chemistry 160. Three lectures and one 4-hour laboratory per week.
Full course, Modules 3-4. Mr. Wen.

164. BIOPHYSICAL CHEMISTRY.

This rigorous course in physical chemistry, offered as an alternative to Chemistry 162, emphasizes the physical chemistry of biological systems: enzyme kinetics, spectroscopy of biological systems, macromolecules, transport processes, x-ray diffraction. Prerequisite: Chemistry 160. Three lectures and one 4-hour laboratory per week.
Full course, Modules 3-4. Mr. Wen.

200. PHYSICAL CHEMISTRY III.

This is essentially an introduction to quantum mechanics and covers elementary quantum-mechanical treatment of the structure of atoms and molecules. Three lectures and one discussion per week. Prerequisites: Chemistry 160 and 162 or 164.
Full course, Modules 1-2. Mr. Allen.

210. PHYSICAL CHEMISTRY IV.

The course deals with the application of group theory to problems of chemical interest such as molecular vibrations, hybrid orbitals and molecular orbital theory. Three lectures and one discussion per week. Prerequisite: Chemistry 200 or equivalent.
Full course, Modules 3-4. Mr. Allen.

214. SPECIAL PROJECTS.

Individual investigations involve laboratory and/or literature research.
Variable credit.
Modules 1-2-3-4-5. Staff.

215. HONORS COURSE.

The honors course, primarily for majors seeking departmental honors in chemistry, involves a laboratory research project and participation in departmental seminars.
Variable credit.
Modules 1-2-3-4-5. Staff.

230. PHYSICAL ORGANIC CHEMISTRY.

Not offered, 1974-75.

This is a lecture course on the fundamentals of organic chemistry including molecular structure, acidity and basicity, kinetics and mechanisms with emphasis on the most recent advances in organic chemical theory. Prerequisites: Chemistry 130 or 132, 160 or consent of the instructor.
Full course, Modules 1-2. Mr. Trachtenberg.

242. NUCLEAR SCIENCE.

This course covers the fundamentals of nuclear chemistry and physics: production, isolation, identification and measurement of radioactive atoms. Three lectures and three laboratory hours per week. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Brenner.

280. INSTRUMENTAL METHODS.

This laboratory course covers the principles and application of modern instrumental techniques to the separation and analysis of mixtures and for the characterization of pure compounds. Two

lectures and six laboratory hours per week. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Brenner.

300. RESEARCH.

Variable credit.
Modules 1-2-3-4-5. Staff.

312. INORGANIC CHEMISTRY.

This is an advanced treatment of theoretical and descriptive inorganic chemistry. Prerequisite: consent of the instructor.
Full course. Mr. Allen.

322. THERMODYNAMICS.

Not offered, 1974-75.

This lecture course discusses applications of classical thermodynamics to chemical systems.
Full course. Mr. Brenner.

323. STATISTICAL CHEMISTRY.

This lecture course treats statistical mechanical analogs of thermodynamic functions and their application to chemical systems. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Wen.

333. SYNTHETIC ORGANIC CHEMISTRY.

These lectures on synthesis of organic molecules emphasize scope and limitations of general methods, mechanism and stereochemistry, synthesis of carbon to carbon bonds, oxidation and reduction. Prerequisite: Chemistry 230, or consent of the instructor. Offered in alternate years.
Full course, Modules 3-4. Ms. Erickson.

335. NATURAL PRODUCTS.

Not offered, 1974-75.

The chemistry of selected naturally occurring compounds. Includes structure determination, synthesis, mechanistic interpretation of exotic transformations, and biogenetic theory. Prerequisite: consent of the instructor. Offered in alternate years.
Full course. Ms. Erickson.

340. QUANTUM CHEMISTRY.

This course in elementary quantum mechanics covers simple systems, properties of wave functions and approximation methods for complex systems.
Full course. Mr. Allen.

341. ADVANCED QUANTUM CHEMISTRY.

This is a more sophisticated continuation of quantum chemistry: approximation methods, atomic states, spectroscopy and molecular methods. Prerequisite: Chemistry 340 or consent of the instructor.
Full course. Mr. Brenner.

344. SELECTED TOPICS IN ADVANCED NUCLEAR CHEMISTRY.

This is a discussion of the current experimental and theoretical literature in nuclear reactions, fission, and nuclear spectroscopy. Prerequisite: Chemistry 242 or its equivalent.
Full course. Mr. Brenner.

350. SEMINAR.

This seminar consists of reports on research work and discussions of recently published work.
No credit. Guest Lecturers, Staff and Graduate Students.

360. COORDINATION COMPOUNDS.

This advanced course in inorganic chemistry treats chemical and physical properties of complexes: theories of coordination, stereoisomerism, reaction mechanisms and solution stabilities. Offered in alternate years.
Full course, Modules 1-2. Mr. Allen.

361. MOLECULAR STRUCTURE.

This is a lecture course on physical methods relevant to the determination of the structure of molecules (x-ray, electron diffraction, magnetic resonance, electronic properties, etc.). Prerequisite: consent of the instructor. Offered in alternate years.
Full course, Modules 3-4. Mr. Inglefield.

369. ELECTRONIC SPECTROSCOPY.

Not offered, 1974-75.

This is an introduction to the study of ultraviolet and visible absorption spectra as well as emission spectra. Prerequisite: consent of the instructor. Offered in alternate years.

Full course. Mr. Wen.

379. SPECIAL TOPICS.

This seminar course consists of research and literature; reports by graduate students.

Full course. Staff.

380. RESEARCH CONFERENCE.

This conference consists of informal reports of research work being done in the laboratory.

No credit. Staff and Graduate Students.

COMPUTER SCIENCE

The courses in the area of Computer Sciences listed below are available to Clark students. They involve the use of the Xerox 530 Computer System located on campus. Other computer science courses are available through the Worcester Consortium.

101. INTRODUCTION TO COMPUTER PROGRAMMING.

An introductory programming course designed for students with no mathematics beyond high school algebra. The fundamentals of the FORTRAN IV programming language are introduced. Students develop a working knowledge and understanding of number representation and arithmetic, arrays and indexing, character representation and manipulation, subprogram definition and parameter passing, loaders and assemblers, various algorithms, and an overview of third generation computers.

Full course, Modules 1-2. Mr. Larson.

102. COMPUTER APPLICATIONS.

The topics of storage and retrieval, file design, simulation, queuing, sorting, and computer graphics are covered. Several projects requiring programming skills are assigned. Prerequisite: Computer Science 101 or consent of instructor.

Full course, Modules 3-4. Mr. Larson.

103. INTRODUCTION TO COBOL PROGRAMMING.

The concepts of Cobol, today's most widely used programming language for business applications, are introduced. The student is expected to complete a number of programming assignments during the course. Prerequisite: Computer Science 101 or consent of the instructor.

Full course, Modules 3-4. Mr. Page.

140. ASSEMBLER LANGUAGE PROGRAMMING.

This course is designed to enable the student to write substantive programs in assembler language for the Xerox 530. While a knowledge of a higher level language is not necessary, some familiarity with computer operations would be helpful. Otherwise, permission of the instructor is required.

Full course, Modules 1-2. Mr. Page.

201. ADVANCED COMPUTER PROGRAMMING.

This course is designed for students with previous programming experience. Each student is expected to select and carry to completion a project requiring substantive computer analysis in machine language, assembler, or any higher level language.

Variable credit.

Modules 1-2, 3-4. Staff.

Mathematics. 118. FORTRAN FOR SCIENCE STUDENTS.

Refer to description under Mathematics.

Mr. Stubbe, Mr. Poreda.

Mathematics. 119. ELEMENTARY NUMERICAL ANALYSIS.

Refer to description under Mathematics.

Mr. Stubbe.

Mathematics. 120. LINEAR PROGRAMMING.

Refer to description under Mathematics.

Mr. Poreda.

Mathematics. 135. PATTERN RECOGNITION.

Not offered, 1974-75.

Refer to description under Mathematics.

Geography. 212. COMPUTER PROGRAMMING.

Refer to description under Geography.

Mr. Howard.

ECONOMICS

DEPARTMENT FACULTY

Roger C. Van Tassel, Ph.D., Professor of Economics, Department Chairman
James A. Maxwell, Ph.D., Professor of Economics, Emeritus
Howard W. Nicholson, Ph.D., Professor of Economics
David J. Ott, Ph.D., Professor of Economics
Attiat F. Ott, Ph.D., Professor of Economics
George E. Hargest, M.B.A., Associate Professor of Economics, Emeritus
Frank W. Puffer, Ph.D., Associate Professor of Economics, Dean of the College
Alan F. Gummerson, Ph.D., Assistant Professor of Economics
Donald E. Wise, Ph.D., Assistant Professor of Economics
Robert C. Hsu, Ph.D., Assistant Professor of Economics
Jang H. Yoo, Ph.D., Assistant Professor of Economics

UNDERGRADUATE PROGRAM

The undergraduate program is designed to give the student a comprehensive grasp of the underlying principles and functions of economic institutions, and to develop habits of systematic thought. Economics 10, Issues and Perspectives, is prerequisite for all "100"-level courses and for Economics 11, Principles of Economics. Economics 11 is prerequisite for "200"-level courses in the department. Majors in Economics are required to take Economics 205.1 and 205.2, (Micro and Macro) and are strongly advised to take Economics 160, Introduction to Statistical Analysis. Students planning on graduate study in Economics are advised to elect courses in Economic Theory, Statistics and Econometrics, and Mathematics. Prerequisites for the M.B.A. degree may be completed as part of the undergraduate major.

At least 9 full courses in economics are required plus a minimum of 3 courses selected from related departments.

Candidates for departmental honors may engage in a program of independent study off-campus during two modules of the junior year. These students may work for business firms or government agencies in applied economic research and receive academic credit.

Some advanced courses may be offered only in alternate years. Detailed course descriptions are available at the department office and at the Registrar's office.

GRADUATE PROGRAM

The University offers facilities for graduate study and research leading to the Master of Arts degree and Doctor of Philosophy degree in Economics and with the cooperation of the Department of Management, to the Master of Arts in Applied Economics.

Graduate students may elect to take a limited amount of work in related courses offered by other departments.

Scholarships and fellowships are available for a limited number of well-prepared students. These appointments exempt their holders from tuition fees and some carry stipends in varying amounts. Several teaching assistantships are also awarded which enable graduate students to gain experience in undergraduate instruction. These carry remission of tuition and a cash payment, up to $3,200 for part-time work (one-half).

MASTER OF ARTS PROGRAM

Students interested in the application of economics to operational situations in business and government are encouraged to enroll in the M.A. program in applied economics. This program is built around a core of economic theory and econometrics plus a choice of applied business fields, actual on-site research—consulting experience, and a thesis. With adequate prerequisites full-time students can complete this program in one year.

Students enrolled in the Ph.D. program may be awarded the M.A. degree upon satisfactory completion of the Ph.D. oral examination; or, in the case of students who do not continue toward the Ph.D., upon satisfactory completion of an approved program of course work, the writing of an M.A. thesis and an oral examination.

A student should discuss his plans with the graduate student advisor on or before Registration Day and secure approval of his course program.

DOCTOR OF PHILOSOPHY PROGRAM

Two full academic years of graduate work, or its equivalent in part-time work, is necessary for admission to Ph.D. candidacy. One of these years must be spent in residence at Clark University. In residence is broadly defined as work done at Clark University under the immediate personal supervision of at least one member of the University faculty. For the degree of Doctor of Philosophy, 8 full courses is a normal full-time program.

All candidates for the Ph.D. in Economics are required to demonstrate proficiency in Econometrics and Mathematical Economics, i.e., by passing designated courses offered in the Department or, in the case of prior preparation, by passing a test given by the Department.

Each student in the Ph.D. program is required to demonstrate proficiency in Economic Theory. The Economic Theory requirement includes Micro-theory, Macro-theory and the History of Doctrine. Use of mathematics may be required in the examination in Economic Theory. The student satisfies the Economic Theory requirement by passing course examinations usually at the end of the first year of graduate study. During the second year of study students will take a written comprehensive examination.

Upon completion of the Economics Theory, the comprehensive examination, and other required preparations, and after the student passes a written examination in his three special fields, he is admitted to candidacy for the Ph.D. These fields may be selected from among the following: Money and Banking, Public Finance, Industrial Organization, International Trade, Labor, Regional Economics, Econometrics Advanced Theory or one field selected from related subjects. If Econometrics or Advanced Theory is selected as a special field, the level of performance required is substantially higher than the general requirement in Econometrics and Economic Theory for all Ph.D. candidates. The choice of fields must be cleared in advance with the graduate student advisor. Field courses are typically offered on alternate years. Soon after having passed the field exams, each student is expected to make a presentation before an informal conference with his dissertation committee demonstrating *both* the extent of his knowledge, of his dissertation field and the feasibility of the proposed topic.

Upon completion of the Dissertation in a form acceptable to his committee, the candidate will provide a copy of the Dissertation to the Department, the staff and graduate students in the department. After a period of approximately two weeks, to permit a wider reading of the Dissertation within the department, the candidate will present his Dissertation at a seminar open to all staff and graduate students in the Department. Final approval of the Dissertation will be granted by the committee after consideration of any suggestion of changes or challenges arising from the final seminar. Unless the Dissertion is completed and defended within five calendar years from admission to candidacy, the certifying examinations must be repassed.

The dissertation must be a real contribution to knowledge, based upon independent research, convincingly presented, and acceptably written. Published articles may be accepted by the department instead of a dissertation.

Some teaching experience at Clark or such other teaching as the Department may regard as equivalent, is prerequisite to the Doctor's degree.

COURSES

10. ISSUES AND PERSPECTIVES.

By analysis of important current policy issues the student is introduced to the vital contribution economics can make to systematic thought and understanding. Rather than emphasizing economic theory, the course begins with issues in the social sciences that are of obvious and important concern. From a study of issues the course proceeds to show how development and use of some very basic economic concepts can aid materially in the analysis. Open to Freshmen. Multiple sections.

Full course, Modules 1-2.
Full course, Modules 3-4.
Full course, Module 5. Staff.

11. PRINCIPLES OF ECONOMICS.

An introduction to economic analysis. This course develops a basic set of economic concepts utilized in the "200"-level courses offered in the department. Basic elements of price and income theory are emphasized. Policy questions are treated both to reinforce concepts and illustrate applicability of the analysis. Open to Freshmen. Prerequisite: Econ. 10. Multiple Sections.

Full course, Modules 3-4.
Full course, Module 5. Staff.

107. INTERNATIONAL FINANCIAL DEVELOPMENTS.

This course traces the development, roles, importance, and problems in international finance. A multinational world requires an efficient international financial system. Yet, design of a system that permits orderly international trade and retains national identity and autonomy in vital areas of policy is a difficult and incomplete task.

Half course, Module 2. Mr. Van Tassel.

113. MONETARY ECONOMIC THEORY & POLICY.

The theory of money, its role in the modern economy. Determinants of the supply of money and analysis of the role of monetary policy in stabilization policy.

Full course, Modules 3-4. Mr. Ott.

115. PUBLIC EXPENDITURES.

Issues of priorities in the composition and size of public expenditures. Evaluation of the federal budget (expenditures and revenues) according to criteria of efficiency, equity and administrability. Examination of goals of employment, price stability, and growth and role of fiscal policy instruments in achieving them.

Full course, Modules 3-4. Ms. Ott.

116. TAX SYSTEMS AND POLICIES.

Not offered, 1974-75.

The course outlines federal taxes and tax policies in the United States. It explains emerging issues in federal taxation—tax equity, the effect on income distribution, the relative tax burden of the rich and the poor and tax reforms, and discusses alternative solutions. Taxes as a tool for economic stabilization and growth are also analyzed.

Ms. Ott.

123.1 SPECIAL PROBLEMS: OIL.

This course examines the evolution of the oil "crisis." Among topics treated are: availability of oil, feasibility of domestic alternatives, Middle Eastern and big-company politics and economics, environmental issues, tax favoritism, industrial structure, and the limits to self-sufficiency.

Half course, Module 1. Mr. Van Tassel.

123.2. SPECIAL PROBLEMS: AGRICULTURE.

We, as students and faculty, living in and concerned with the problems of a developing urban society, often do not fully recognize the dynamic nature and very important contribution of agriculture in economic development. This course will examine the role of agriculture and various strategies for agricultural development. Attention will be paid to the behavior and problems of farmers as microeconomic units, and to the sectoral relationship between agriculture and industry in economic development. Policies conducive to agricultural development will be discussed. Finally, some agricultural marketing problems of the underdeveloped countries will be analyzed.

Half course, Module 5. Mr. Hsu.

123.3 SPECIAL PROBLEMS: WAGE-PRICE CONTROL.

Since 1971, the United States has been going through several "phases" of what is alleged to be a temporary experiment with wage and price control. Other nations have long utilized "incomes" policies to attempt to control inflation without having large-scale unemployment. There are prominent professionals who argue for continued wage-price controls in the United States; other professionals who argue against controls even on a temporary basis.

This course proposes to examine two central questions: First, why is there an argument? Has our economy changed in some way so that controls are needed? Are there viable alternatives? Second, what are the major problems in developing and operating a system of wage-price control? Recent experience in the United States and Europe will be examined.

Half course, Module 5. Mr. Van Tassel.

124. ECONOMIC THOUGHT AND MODERN CIVILIZATION.

This new course is broadly interdisciplinary. It emphasizes the relationship between economics and related areas, such as philosophy, ethics, political science, sociology, mathematics, and statistics. Beginning from the perspective of economic thought, the course traces developments in economic analysis, showing how economic analysis has both affected and been affected by the contact with other disciplines. The course considers how modern economic thought has come to diverge in essential aspects from the ideas of social philosophers like Adam Smith and Karl Marx, and emphasizes what scientific economic analysis does and does not enable us to understand about modern social problems and issues.

Full course, Module 5. Mr. Nicholson.

126. PUBLIC POLICIES TOWARD BUSINESS.

Government power can be used to modify business practice. By what means can this power be exercised; guided by what criteria; with what degree of effectiveness? Topics trace development of: anti-monopoly regulation, consumer protection, and other major government interventions supplementing the market. Open to Freshmen.

Full course, Modules 3-4. Mr. Nicholson.

150. CRITIQUES OF THE AMERICAN ECONOMY.

Course will examine radical critiques of U.S. economy. A neo-Marxist analysis will provide an overview followed by in-depth examinations of alleged U.S. economic imperialism, the extent of the economy's dependence on military spending, and the nature of income distribution and poverty in the U.S.

Full course, Module 2. Mr. Gummerson.

160. INTRODUCTION TO STATISTICAL ANALYSIS.

Basic concepts and techniques of statistical method in economic analysis: descriptive statistics; permutation and combination; an introduction to probability theory; sampling distribution; standardized normal distribution and other related distributions; simple and multiple regression; simple forecasting and statistical decision-making.

Full course, Modules 1-2. Mr. Yoo.

161. ECONOMIC FORECASTING.

Model-building techniques and the application of the computer to forecast economic variables—simple models for changes in investment, consumption, government expenditures, money supply, and GNP. Computer programming is not required. Students will learn how to utilize the computer facilities.

Full course, Module 5. Mr. Yoo.

176. COMPARATIVE ECONOMIC SYSTEMS.

Many different political and economic systems exist in the world. Most systems are continually undergoing changes that gradually, but importantly, affect their performance. This course surveys both the major theoretical models of economic systems and the actual workings of contemporary economic systems. Mixed economics, market socialist, and centrally planned economies are examined.

Full course, Modules 1-2. Mr. Hsu.

177. CHINESE ECONOMY.

Not offered, 1974-75.

Since 1949, when the People's Republic of China was founded, the Chinese economy has gone through great vicissitudes. There have been many unexpected turns of events; to the Chinese leadership, the road to both economic development and socialism proves to be more arduous than socialist theories would suggest; to critics abroad, the Chinese leadership proves to be more pragmatic and the economy more resilient than expected.

The objectives of this course are to examine, with the aid of economic analysis, these economic changes that have profoundly affected the lives of one quarter of mankind, and to see whether "the Maoist model" of economic development can be of any help to other developing countries.

Full course. Mr. Hsu.

205.1 MICROECONOMIC THEORY.

The objective of the course is to describe and analyze how a market-oriented economy functions in answering five basic economic questions. These are: a) What commodities to produce? b) How much of each to produce? c) What productive techniques to use and how to provide incentive? d) How to distribute the output among the various members of society, and e) What provision to make for the future? Interspersed with the theory, the course contains frequent examples that deomonstrate the use of microeconomics in solving problems faced by the decision-making unit in both the private and public sectors.

Full course, Modules 1-2. Mr. Wise.

205.2 MACROECONOMIC THEORY.

The course focuses mainly on the forces that affect the over-all performance of the economy. It is a study of the determinants of economic activity (such as consumption, investment, government purchases and exports); measures of economic performance (such as the level and rate of growth of national income and product, the level of employment and unemployment, the general price level, and the nation's balance of international payments). In addition, the course deals with specific current economic problems facing the U.S. economy, discusses public policies instituted to deal with them; their success or failure and the repercussions of some of these policies on world economies.

Full course, Modules 3-4. Mr. Gummerson.

207. INTERNATIONAL ECONOMICS.

Applies and develops concepts of economic theory to such questions as: determinant of international and regional specialization and trade, the theory of tariff intervention, the balance of payments, adjustment forces and disequilibria, and application of theory to important issues in international trade.

Full course, Modules 3-4. Mr. Van Tassel.

222. LABOR AND MANPOWER.

The collective actions or organized workers and employers are important influences in our economy. This course analyzes labor-management behavior, showing both how these groups respond to pressures and market changes and how their responses in turn are independent factors affecting employment, growth, and inflation.

Full course, Modules 3-4. Mr. Wise.

224. HISTORY OF ECONOMIC DOCTRINE.

Economic thought profoundly influences modern society even when it is not well understood. Policy-makers are affected by economic thought in ways which are not always fortuitous. The great English economist, Lord Keynes, has written, "Madmen in authority who hear voices in the air are distilling their frenzy from some academic scribbler of a few years back."

This course is a survey of developments in economic thought. It traces the sense in which economics has evolved as a science—a method of thinking clearly about complex and important social problems. Attention is also paid to the influence of economic thought on noneconomists—on policy-makers and by general citizens.

Full course, Modules 3-4. Mr. Nicholson.

228. ECONOMICS AND DEVELOPMENT.

This course will examine the major theories of economic development, the major problems confronting the less developed countries, and the policies and strategies appropriate for economic development. The purposes are to show the relevance of economics in international development, to promote an understanding of the problems of the less developed countries, and to help provide analytical skills useful to students interested in a career in international development.

Full course, Modules 3-4. Mr. Hsu.

261. PROGRAMMING FOR ECONOMISTS.

Introduction to FORTRAN programming with emphasis of the use of the computer in economic research and analysis.

Full course, Modules 1-2. Mr. Wise.

265. BASIC ECONOMETRIC THEORY.

Introduction to econometric methods; statistical inferences and testing hypotheses; model-building technique and theoretical justification of the model and the estimation method used. Various estimation methods will be presented, and evaluated in terms of their performance and validity in economic empirical studies.

Full course, Modules 1-2. Mr. Yoo.

266. APPLIED STATISTICS AND ECONOMETRICS.

Integration of statistical concepts with the estimation and forecasting of economic variables: estimation of production function; cost analysis; quality analysis; linear programming; input-output method; estimation of aggregate supply and demand function; model for national economy. Prerequisite: Econ. 160 or 265.

Full course, Modules 3-4. Mr. Yoo.

271. INTRODUCTION TO MATHEMATICAL ECONOMICS.

An introductory survey of the use of mathematical methods in economic analysis. Special attention is given to the mathematical framework of the theory of price determination. Prerequisite: consent of the instructor.

Variable credit.

Modules 1-2-3-4. Mr. Nicholson.

272. MATHEMATICAL ECONOMICS.

Not offered, 1974-75.

Mathematical approach to Microeconomic Theory including general equilibrium. Intended for advanced undergraduate students with some knowledge of calculus and linear algebra. This course may be taken in lieu of Economics 205.1.

Staff.

280. JUNIOR HONORS.

Designed to assist honors candidates in integration of the field.
Variable credit.
Modules 1-2-3-4-5. Staff.

281. SENIOR HONORS.

Variable credit.
Modules 1-2-3-4-5. Staff.

282. HONORS.

Eligible students selected by the department may work off campus for a summer and two modules as junior professional Economists in business, government, or industry and receive academic credit.
Variable credit. Staff.
Modules 1-2-3-4-5.

301.1 ECONOMIC THEORY.

Full course, Modules 1-2. Ms. Ott.

301.2 MICROECONOMICS.

Full course, Modules 3-4. Mr. Wise.

302.1 ECONOMIC THEORY.

Full course, Modules 1-2. Mr. Ott.

302.2. MACROECONOMICS.

Full course, Modules 3-4. Mr. Yoo.

313. SEMINAR IN MONETARY ECONOMICS.

Full course, Modules 1-2-3-4. Mr. Ott.

322. LABOR SEMINAR.

Not offered, 1974-75.
Mr. Wise.

325. PUBLIC FINANCE SEMINAR.

Full course, Modules 1-2-3-4. Ms. Ott.

326. INDUSTRIAL ORGANIZATION SEMINAR.

Not offered, 1974-75.
Mr. Nicholson.

327. INTERNATIONAL TRADE SEMINAR.

Not offered, 1974-75.
Mr. Van Tassel.

328. ECONOMIC DEVELOPMENT.

Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Hsu.

377. REGIONAL SEMINAR.

Not offered, 1974-75.

EDUCATION

DEPARTMENT FACULTY

William C. Kvaraceus, Ed.D., Professor of Education and Sociology; Department Chairman
Helen J. Kenney, Ed.D., Professor of Education
David Zern, Ph.D., Associate Professor of Education, Adjunct in Psychology

Richard P. Boardman, Ed.D., Assistant Professor of Educational Sociology

Judith T. Guskin, Ph.D., Assistant Professor of Education

Irving A. Schwartz, M.A., Assistant Professor of Education and Clinical Instructor in Social Studies, Program Director, Training Complex Project

Marcia A. Savage, Ed.D., Assistant Professor of Education

William E. Topkin, Ed.D., Assistant Professor of Education

Lawrence Bader, Ph.D., Affiliate Assistant Professor of Education

Eleanor R. Moosey, Ed.D., Affiliate Assistant Professor of Education

Spencer R. Potter, Ed.D., Lecturer in Education

Alan E. Guskin, Ph.D., Adjunct Professor of Education and Sociology

With the cooperation of Professor Schatzberg and Professor Reid of the Department of Language and Literature; Professor Silverman and Professor Tepper of the Department of Mathematics; Professor Ford of the Department of History; Professor Know of the Graduate School of Geography; Professor Beck of the Department of Philosophy; Professor Krueger of the Fine Arts Department; Clinical Instructor in English, Victoria Trachtenberg; Clinical Instructors in Elementary Education, Barbara Kohin, Hessa Miller, Deborah Zern, and Miriam Sheftel.

UNDERGRADUATE PROGRAMS

The department encourages all students who may be interested in preparing for careers in education to consult with some member of its staff early in their careers at the University. During the first two years, students should complete as many specific requirements for the degree of Bachelor of Arts as possible, and lay a broad foundation of scholarship in the subjects in which they wish to specialize. However, a limited set of experimental courses has been made available for selected freshmen and sophomores. Special permission is required for admission to education courses taken at the undergraduate level. Generally, the actual election of courses in education should be postponed until the junior year.

In conformity with its policy of emphasizing the importance of scholarly background, the department offers its courses as electives, and not as undergraduate majors.

However, to enable those students contemplating teaching careers the Department provides an internship in the senior year as a transition to professional study at the graduate level. and for entry into beginning teaching positions. The internship module is limited to seniors who have completed major requirements at a satisfactory level of scholarship. Most interns carry their internship for a 3 to 4 course credit block during either the first and second modules or the third and fourth modules of their senior year. Decision to elect the internship module must be made before the end of the junior year, and must be approved by the Department of Education and reviewed by academic departments for competency in subject matter areas for secondary school teaching.

A special sequence of courses sponsored jointly by the Clark Training Complex Project, the Department of Education, and several academic departments is designed to provide an opportunity for a limited number of undergraduates interested in a career in teaching to participate in a diversified four-year training sequence. A series of seminars, led by a doctoral candidate in the Clark Department of Education's Social/Educational Analyst Program, and assisted by a Training Complex cadre teacher and post-internship senior, provides the opportunity to discuss and define issues, to process and analyze data, and to propose solutions to sociologically defined problems, curricular problems, and psychological guidance problems.

GRADUATE PROGRAMS

The Department offers one program leading to the degree of Master of Arts in Education and another leading to the degree of Doctor of Education.

MASTER OF ARTS IN EDUCATION:

Admission Requirements: In addition to the general admission requirements to the Graduate School, a personal interview is usually required by the Department of Education.

Programs Available: Three programs leading to the degree of Master of Arts in Education are available:

1. A full or part time program in early childhood care and education for students with a bachelor's degree and strong academic background. Experienced students may complete the program in one year. It includes advanced work in the academic fields and internship experiences.

2. A transitional program in educational analysis leading to doctoral work in educational psychology or educational sociology.

3. Extended Training for certified teachers.

PROGRAM REQUIREMENTS:

1. *Courses:* for further details on course requirements, consult the Department of Education.

2. *Internships:* The department provides opportunities for extended internships with supervision.

3. *Thesis or Additional Study in Lieu of Thesis:* All candidates for the degree of Master of Arts in Education must choose one of the following plans:

(a) Prepare an acceptable thesis.

(b) Elect, in lieu of thesis, two additional full courses.

(c) Elect, in lieu of thesis, a seminar in which intensive work will be required in preparing and presenting professional papers before fellow graduate students and a member of the staff.

4. Final oral examination: The passing of a final oral examination will be required of all candidates.

Doctor of Education: A specialized program for the degree of Doctor of Education has been established. Two directions for study lead to the doctoral degree in the areas of Social or Educational Analysis. These specialities differ in the scope of their concern. The social analyst studies the structure and functions of social systems and their educational implications. The educational analyst focuses attention on the individual learner and the school as a learning environment. Both programs stress assessment and research.

There are four major components to this doctoral program: (1) Social Science Foundations. Depending upon the individual student's orientation, he will pursue an extended program relating psychological and sociological perspectives to issues in education. All students will be expected to acquire expertise in both foundation fields that will be examined through a variety of learning experiences, including integrative field studies; (2) Educational Process. Students will acquire or otherwise demonstrate an appropriate level of competence in understanding and applying bases and criteria involved in curriculum decisions, development, and implementation; (3) Research and Evaluation. All students will be expected to demonstrate or otherwise acquire an appropriate level of competence in statistical procedures and research design; and (4) Consultation and Group Dynamics. All students will be expected to participate in specific experiences aimed at developing the interpersonal skills needed to work effectively with small groups and to develop effective supervisory and consulting techniques.

The formal course of study is annually evaluated through individual assessments including the required preliminary exams. The design and preparation of a dissertation is the final requirement of the program offering the student the opportunity to study in depth a topic of specific concern to him.

Applicants for admission to the program will be expected to give evidence of high scholarly achievement and leadership promise in their field. Other evidence of potential such as results from Graduate Record Examinations, Miller Analogies, etc. may be required. Potential candidates are encouraged to sit in on graduate classes and otherwise familiarize themselves with the graduate program before completing formal application procedures. Personal interviews with staff of the Department will then be required before applications are acted upon. In special cases, foreign students may be excused from the Examination and interview requirement.

The department admits to graduate work only those students who plan to enroll in the Ed.D. program on a full-time basis. A residence requirements demands a minimum of full-time study (not less than ten full courses beyond the master's degree). The student is required to pass his course work with distinction. The number of courses to be taken is determined through consultation with the student's individual advisor, but generally calls for eight or ten modules of full-time study beyond the master's program. Language requirements in the Department are optional and relate to the student's background and future professional goals.

COURSES

101. FRESHMAN PRACTICUM: SOCIOLOGICALLY DEFINED STUDY.

Open to 9 freshmen with the permission of the Department of Education.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Schwartz.

102. SOPHOMORE PRACTICUM: PSYCHOLOGICALLY DEFINED STUDY.

Open to 9 sophomores with permission of the Department of Education.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Schwartz.

103. JUNIOR PRACTICUM: CURRICULUM STUDY.

Open to 9 juniors with permission of the Department of Education.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Schwartz.

105. CONTEMPORARY ISSUES IN EDUCATION.

The aim of the course is to provide an introduction to the discipline of education. The experience will be intensive, committing the student's time and energies full-time for five days a week, with additional reading to be done in the evening and/or on weekends. Structurally, the learning experiences will be developed in the following manner: A particular theme will serve as the focus for each of the seven weeks during which the course will take place. Typical themes are: Education for Self or Society; Teachers and Teaching in Higher Education; To Grade or Not to Grade; Educating the Child Who is Different; School Reform; Radical Vision and the Roots of Tradition; The Young Child: Comparative Study of Day Care.
Full course, Module 5. Staff.

140. MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS.

Refer to description under Mathematics 14.
Full course, Modules 3-4. Staff.

150. SEMINAR IN MATHEMATICAL METHODS AND MATERIALS.

Refer to description under Mathematics 150.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Tepper.

170. SEMINAR IN METHODS AND MATERIALS IN PHYSICS AND MATHEMATICS TEACHING.

Not offered, 1974-75.

Refer to description under Physics 170.
Mr. Tepper, Mr. McEvoy.

201.1 EDUCATIONAL PSYCHOLOGY: PRINCIPLES OF CHILD DEVELOPMENT.

Principles of child development with emphasis upon maturation, learning and personality development in the elementary school years. Recommended for those planning to take Internship Module.
Full course, Modules 3-4. Ms. Savage.

201.2 EDUCATIONAL PSYCHOLOGY: PRINCIPLES OF ADOLESCENT DEVELOPMENT.

Principles of adolescent development with special emphasis upon learning and personality development in the secondary school years. Recommended for those planning to take the Internship Module.
Full course, Modules 1-2. Ms. Savage.

201.3 EDUCATIONAL PSYCHOLOGY: CONTEMPORARY ISSUES IN EDUCATION.

An introduction to some contemporary issues in education and an overview of theoretical and research literature which may give insight into developmental and educational processes. The emphasis will be on "why" (within the framework of educational settings) rather than "how to". Recommended for those planning to take the internship module and who are working with the younger child. Offered in Module 2 and repeated in Modules 3-4.
Full course, Module 2.
Full course, Modules 3-4. Ms. Guskin.

203. INTRODUCTION TO TEACHING.

Refer to description under Geography 203.
Mr. Knos, Staff.

204. CURRICULUM DEVELOPMENT & ANALYSIS IN GEOGRAPHY AND HISTORY.

Refer to descriptions under Geography 204 and History 290.
Full course, Modules 1-2. Mr. Schwartz.

205.1. METHODS OF TEACHING AND RESEARCH IN EDUCATIONAL SYSTEMS.

Refer to description under Geography 205.1.
Full course, Modules 1-2. Mr. Schwartz.

205.2. EDUCATION AND GEOGRAPHY INTERNSHIP SEMINAR.

Refer to description under Geography 205.2.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Schwartz.

206. AUTOBIOGRAPHY WORKSHOP.

Refer to description under Geography 206.
Half course, Modules 1-2. Mr. Schwartz.

211. FIELD OBSERVATION: COGNITIVE AND SOCIAL-INTERPERSONAL BEHAVIOR IN THE CLASSROOM SETTING.

Illustration of various cognitive and social-interpersonal models of human behavior in the classroom setting. Special consideration will be given to the work of Freud, Piaget, Skinner, Wertheimer, Lewin, and F. Kluckhohn. Students will carry out field observations, and formulate and execute their own individual projects. Same course as Psychology 211.
Full course, Modules 3-4. Mr. Zern.

217. INTERNSHIP TEACHING.

An intensive period of observation and teaching in the field or fields in which the student plans to teach. Individual supervision is given by the department and by teachers in cooperating schools. Admission on consent of the Department.
One-and-one-half course.
Modules 1-2.
One-and-one-half course.
Modules 3-4. Staff and Cooperating Teachers.

222. ATTENTION AND ATTACHMENT: ISSUES IN INFANT CARE.

The attention processes and the attachment behaviors of the infant will be emphasized in this course on the first years of life. Both theoretical and research literature will be analyzed. Direct observations of infants and relevant films will also be utilized.
Full course, Module 5. Mr. Zern

224. TRAINING COMPLEX WORKSHOP IN CURRICULUM DEVELOPMENT.

This workshop is designed to develop a broader conception of curriculum than the one generally held at present. Eight public school teachers and eight Clark undergraduates, prospective teachers, will explore the idea of curriculum as transaction, with emphasis on the substantive, psychological, interpersonal and environmental implications of curriculum for teaching/learning. The main focus of the workshop will be an examination of the problem of autobiography in its essential and existential dimensions, and its translation by the participants into curricular activity.
Full course, Modules 1-2. Mr. Schwartz.

225. TRAINING COMPLEX SEMINAR.

A seminar which brings together Clark student-teachers and teachers from cooperating schools in the Worcester area to discuss problems, describe strategies, and share techniques related to their student-teacher/cooperating teacher experience. The group will continue to explore and evaluate the translation and application to autobiographical approaches to teaching and learning.
Full course, Modules 1-2. Mr. Schwartz.

230. CREATIVE DRAMATICS IN EDUCATION.

Refer to description under Theatre Art 290.
Mr. Raviv.

234. FIELD PROJECTS.

Provides individualized and extended experiences in a wide variety of agencies and institutions involving the education and comprehensive care of children and youth. Supervision is

provided by the University and field agency personnel; combines related seminars and conferences as a basis for critical analysis of the experiences within the context of applied theory and practice.
Variable credit.
Modules 1-2-3-4-5. Ms. Kenney, Mr. Kvaraceus & Staff.

242. EMOTIONAL PROBLEMS AND SCHOOL LEARNING.

Considers the psychodynamics of emotional disturbance in children and adolescents, diagnostic and remediation techniques, and various educational approaches. Involves practicum experiences with disturbed children.
Full course, Modules 3-4. Ms. Kenney.

250. SCHOOL AND COMMUNITY.

An investigation of the school and community relationship including parent and teacher association, citizens groups, school committees, community schools and schools as communities.
Full course, Modules 1-2. Mr. Boardman.

251. AMERICAN YOUTH IN SCHOOL AND SOCIETY. Not offered, 1974-75.

Considers the role, development, and education of youth with special consideration of youth's involvement in the changing school system and other youth-serving agencies and institutions.
Full course. Mr. Kvaraceus.

260. LINGUISTICS AND LANGUAGE LEARNING.

Refer to description under catalog Section on Linguistics. Prerequisite: Linguistics 114, which may be taken either prior to or concurrently with this course, and for which substitutes may be available if the instructor is consulted well in advance; permission required. Given in alternate years.
Full course, Modules 1-2. Mr. Reid.

272. SEMINARS IN STUDENT TEACHING.

Half course.
Modules 1-2 (Corequisite with 217).
Modules 3-4 (Corequisite with 217). Staff.

273. SEMINAR IN METHODS AND CURRICULUM IN MATHETMATICS TEACHING AT THE SECONDARY LEVEL.

Full course, Modules 3-4. Mr. Tepper.

280. JUVENILE DELIQUENCY AND THE SCHOOL.

Considers the role of the school as a central agency in the prevention and control of norm-violating behavior.
Full course, Module 5. Mr. Kvaraceus.

282. INTRODUCTION TO INSTRUCTION AND CURRICULUM DEVELOPMENT AT THE SECONDARY LEVEL.

An introduction to the fundamentals of the instructional process and curriculum planning at the secondary school level. The first two-thirds of the course will concentrate on various modes of teaching. The last third will cover principles of curriculum development for specific subject fields.
Full course, Modules 1-2. Staff.

283. PRACTICUM: TEACHING THE EMOTIONALLY DISTURBED.

Provides supervised teaching experience with seriously disturbed children in special settings.
Full course, Modules 3-4. Ms. Kenney.

285. ELEMENTS OF DIAGNOSTIC PRESCRIPTIVE TEACHING.

Planning individual instruction with classroom application.
Half course, Modules 1-2.
Half course, Modules 3-4. Ms. Kenney.

286. PRACTICUM: DIAGNOSTIC/PRESCRIPTIVE TEACHING.

Provides supervised teaching experience in regular school settings for children with special needs.
Full course, Module 5. Ms. Kenney.

287. INTERNSHIP MODULE IN ELEMENTARY EDUCATION.

This integrated internship provides an intensive work-study experience in elementary schools and other educational agencies in the Worcester area. It involves theoretical course work; a full-time supervised experience in schools or in some other educational, welfare and recreation agency; and related workshops, seminars, and conferences.

The elementary module provides credit in the following areas: student teaching (two full courses including the professional teaching seminar) with three half-courses distributed to cover curriculum, methods and materials of instruction in the basic elementary school program.

Limited to seniors who will have completed major requirements and whose grade point average reflects high level of scholarship. Students contemplating internships must make application during their junior year.

Three and-one-half courses.
Modules 1-2.
Three-and-one-half courses.
Modules 3-4. Ms. Kenney, Staff and Cooperating Teachers

288. SOCIOLINGUISTICS.

Crossdisciplinary perspectives on language behavior, communicative competence, attitudes, and socio-cultural variations as they affect individuals, groups, and societies. A modest study will be designed and carried out by the students.
Full course, Modules 3-4. Ms. Guskin.

290. PHILOSOPHY OF EDUCATION.

The aims, processes and materials of education with special reference to the influence of philosophical ideas on educational problems.
Full course, Modules 1-2. Mr. Beck.

293. WORKSHOP IN SECONDARY ENGLISH CURRICULUM.

Refer to description under English 293.
Full course, Modules 1-2. Ms. Trachtenberg.

294. MATERIALS AND METHODS IN TEACHING SECONDARY ENGLISH.

Refer to description under English 294.
Full course, Modules 3-4. Ms. Trachtenberg.

296. PSYCHO/EDUCATIONAL CASE STUDIES.

Considers psychoanalytic assessment of the individual child with educational planning.
Full course, Module 4. Ms. Kenney, Ms. Todd.

297. PATTERNS OF CHILD-REARING: A CROSS-CULTURAL ANALYSIS.

Analysis of various sub-cultural and cross-cultural patterns of child-rearing, dealing with both similarities and differences within the human species. The materials for this consideration will be both theoretical (particular emphasis on Freud and F. Kluckhohn) and descriptive ("case studies" of such as Walden II, day care and higher education, and the kibbutz).
Full course, Modules 1-2. Mr. Zern.

298. PRE-SCHOOL EDUCATION I: THEORY AND PRACTICE.

Detailed consideration of day-to-day functioning in the classroom. The rationale behind the various specific techniques will be considered in detail.
Full course, Modules 1-2. TBA.

299. PRE-SCHOOL EDUCATION II: PRACTICUM.

Concurrent with 298. A practicum experience of 10-12 hours/week in various pre-school child care centers.
Full course, Modules 1-2. TBA.

303. HUMAN LEARNING AND INSTRUCTION.

Analysis of basic psychological approaches (primarily Freud, Skinner and Wertheimer) to the issues involved in human learning and instruction. Application of these perspectives to the particular situation of the classroom will be considered both during and after the theoretical positions.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Zern.

304. CURRICULUM AND INSTRUCTIONAL SYSTEMS.

Considers the theoretical bases of curriculum and examines various instructional methodologies in detail.
Full course, Modules 3-4. Ms. Kenney.

305. GROUP PROCESS IN EDUCATION.

A four module course designed to provide an opportunity to learn more about interpersonal behavior and group dynamics. Using data generated from within the class, we will pay attention to issues that are central to group dynamics, e.g., how norms are established, in what manner decisions are made, and the roles assumed by individuals. Consideration will be given to the application of group dynamics to the field of education. Readings are drawn from a field of group work and self-analytic groups. Prerequisite: Permission of instructor—Limited to 12 students. See Evening College.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Bader.

306. SUPERVISION: THEORY AND TECHNIQUES.

This course addresses itself to interpersonal styles of supervision. Experience as supervisors will serve as material for class discussion. Concepts to be emphasized include: the supervisory relationship, the role of a supervisor, and strategies of supervision.
Full course, Modules 1-2. Mr. Bader.

308. ANALYSIS AND SUPERVISION OF INSTRUCTIONAL INTERACTION.

Not offered, 1974-75.

Examines both the theoretical and applied aspects of supervision and analysis of interactions in educational settings.
Staff.

311. PRINCIPLES AND PRACTICES OF GUIDANCE.

Within a rationale for pupil services, consideration will be given to the day-to-day functioning of the so-called guidance counselor—his work within the structure of the school system as well as his coordination of services within the school with those of community service agencies.
Full course, Modules 1-2. Mr. Potter.

312. COUNSELING.

Emphasis will be upon the theory and methodology of counseling and upon the management of typical counseling problems. The diagnosis and referral of behavior disorders and related personality maladjustments will be considered. Case material will be presented and analyzed. (311 suggested as a pre-requisite.)
Full course, Modules 1-2. Mr. Topkin.

314. TESTS AND EVALUATION: THEORY AND TECHNIQUES OF MEASUREMENT AND APPRAISAL.

The methods and problems involved in the evaluation of abilities, interests, and achievement of children and youth, both by standardized instruments and by special purpose measures.
Full course, Module 1. Mr. Kvaraceus.
Full course, Modules 3-4. Ms. Kenney & Ms. Todd.

315. TESTS AND EVALUATION: PRACTICA

Provides supervised testing experiences in schools or child welfare agencies. Pre-requisite: 314.
Full course, Modules 1-2.
Full course, Modules 3-4.
Full course, Module 5. Mr. Kvaraceus and Staff.

317. INDIVIDUAL ASSESSMENT OF MENTAL ABILITIES.

Theory and intensive experience in administering and interpreting individual tests of intelligence with major emphasis on Stanford-Binet Revision and Wechsler Intelligence Scales. Emphasizes mechanics of administration and interpretation for use of test results in educational settings.
Half course, Module 2.
Half course Module 3. (Module 2 prerequisite). Ms. Kenney,
Mr. Tsoules.

317. INDIVIDUAL ASSESSMENT OF MENTAL ABILITIES.

Theory and intensive experience in administering and interpreting individual tests of intelligence with major emphasis on Stanford-Binet Revision and Wechsler Intelligence Scales. Emphasizes mechanics of administration and interpretation for use of test results in educational settings.
Full course, Modules 3-4. Ms. Moosey.

320. SEMINAR IN THE SOCIOLOGY OF EDUCATION.

An in-depth consideration of a major issue in education informed by discussion and consideration of relevant literature.
Full course, Modules 3-4. Mr. Boardman.

323. THE ORGANIZATION AND MANAGEMENT OF PROGRAMS FOR YOUNG CHILDREN I: THEORY AND PRACTICE.

Classroom analysis of the following areas: (1) legislation at the federal, state, and local level (2) the utilization of the agency network (3) the organizational structure and dynamics of the child care agency (4) staffing and in-service training (5) budgeting and cost analysis.
Full course, Modules 3-4. Staff.

324. THE ORGANIZATION AND MANAGEMENT OF PROGRAMS FOR YOUNG CHILDREN II: PRACTICUM.

Concurrent with 323. A practicum experience as an assistant to a day care center administrator, involving 10-12 hours/week.
Full course, Modules 3-4. Staff.

327. SCHOOL CONSULTATION: ISSUES AND PROBLEMS.

This course addresses itself to the area of organizational consultation, with a special emphasis on school systems. Its purpose is to provide an overview of important conceptual and practical issues faced by consultants in their everyday work. The format will consist of a systematic review of articles and case studies, each of which is designed to highlight one or more critical dimensions of consultation theory and practice.
Full course, Modules 3-4. Mr. Bader

331.1 RESEARCH TOOLS AND TESTS.

An introduction to the development of questionnaires and interview techniques coupled with and examination of test validation procedures.
Full course, Modules 1-2. Mr. Boardman.

331.2 STATISTICS IN EDUCATIONAL RESEARCH.

An introduction to the descriptive, parametric and non-parametric statistical tests used in educational research.
Full course, Modules 3-4. Mr. Boardman.

336.1 LANGUAGE AND COGNITIVE DEVELOPMENT.

Will investigate the language acquisition process, the relationships between language and cognitive development (emphasizing the two to seven year old period), and the effects of dialect and cultural variations on communication processes and learning in educational settings. Theoretical issues and research literature will be analyzed and a modest study will be designed and carried out by the students.
Full course, Modules 1-2. Ms. Guskin.

336.2 BILINGUAL EDUCATION.

Theoretical and practical issues in designing, implementing, and evaluating programs for children who are receiving bilingual education.
Full course, Modules 3-4. Ms. Guskin.

337. THE SCHOOL AS A SOCIAL SYSTEM.

An examination of some of the classical sociological literature on education including works by Durkheim, Ward, Warner, Hollingshead, Hunter, Duncan, Parsons and others.
Full course, Modules 1-2. Mr. Boardman.

341. SOCIAL-PSYCHOLOGICAL ISSUES IN EDUCATION.

A consideration of selected issues in American education from the point of view of psychological and sociological perspectives. Planned particularly for entering doctoral candidates—others with permission.

Full course, Modules 1-2. Mr. Kvaraceus.
Ms. Kenney.

343. ANALYSIS OF THE RESEARCH PROCESS.

A critical examination of the nature of the research enterprise conducted primarily through an analysis of the strengths and weaknesses of existing research in the social sciences focussed on educational issues. Planned for doctoral students—others with permission.

Full course, Modules 1-2. Mr. Zern.

344. RESEARCH DESIGN.

Critical analysis of alternative ways to design research focussed on problems generated by students, with individual and small group work throughout the year.

Half course, Modules 1-2.
Half course, Modules 3-4. Ms. Guskin.

349. ANTHROPOLOGICAL APPROACHES IN EDUCATION.

Not offered, 1974-75.

Views the schools and learning as containing their own society and culture in dynamic relationship to the surrounding culture and society.

Full course. Staff.

350. SOCIOLOGY OF TEACHING AND LEARNING.

A comprehensive examination of some of the best research and the most important findings in the sociology of teaching and learning.

Full course, Modules 3-4. Mr. Boardman.

370. RESEARCH SEMINAR IN EDUCATIONAL PSYCHOLOGY.

Application of theoretical models and laboratory-oriented empirical research to classroom interaction. Development of particular naturalistically oriented (observational) analytic procedures, and their utilization in classroom. Students and instructor will together create procedures, research design, and then execute the project through to completion.

Half course, Modules 1-2. Mr. Zern.

370. RESEARCH SEMINAR IN EDUCATIONAL PSYCHOLOGY.

For description see above.

Half course, Modules 3-4. Mr. Zern.

379. ADVANCED GRADUATE INTERNSHIP IN EDUCATION.

Variable credit.
Modules 1-2-3-4-5. Staff.

380. DEPARTMENTAL SEMINAR ON CONTEMPORARY EDUCATIONAL PROBLEMS AND ISSUES.

For master's degree candidates who are not writing a thesis. Requires a major paper.

Full course, Modules 3-4. Mr. Kvaraceus and Staff.

GRADUATE READINGS AND THESIS COURSES

38. DIRECTED READINGS IN EDUCATIONAL PSYCHOLOGY.

Variable credit.
Modules 1-2-3-4-5. Staff

381. THESIS.

Variable credit.
Modules 1-2-3-4-5. Staff.

37. DIRECTED READINGS IN EDUCATIONAL SOCIOLOGY.

Variable credit.
Modules 1-2-3-4-5. Staff.

371. THESIS.

Variable credit.
Modules 1-2-3-4-5. Staff.

ENGLISH

DEPARTMENT FACULTY

William H. Carter, Jr., Ph.D., Professor of English, Department Chairman
Karl O. E. Anderson, Ph.D., Professor of English
James F. Beard, Jr., Ph.D., Professor of English
Charles S. Blinderman, Ph.D., Professor of English
James Macris, Ph.D., Professor of English and Linguistics
Stanley Sultan, Ph.D., Professor of English
Jessie C. Cunningham, Ph.D., Associate Professor of English
Serena S. Hilsinger, Ph.D., Associate Professor of English
David H. Abraham, Ph.D., Assistant Professor of English
James P. Elliott, Ph.D., Assistant Professor of English
Arthur F. Kinney, Ph.D., Affiliate Professor of English

UNDERGRADUATE PROGRAM

An undergraduate major in English and American Literature is expected to acquire a liberal education with a broad background in the arts and sciences. To do so, he should become familiar with several fields in the humanities, the social sciences, mathematics, and the sciences; and insofar as is possible, he should attempt to achieve depth in at least one area outside his major field. On becoming a major, the student should at once consult with the Chairman about choosing an advisor; thereafter, he must discuss his program with his advisor at each registration period and obtain his advisor's approval before registering.

ENGLISH

The English major must take at least eight full courses (sixteen modules) in literature other than English 16, 17, 18, 19, and 161. In addition, he must take a minimum of four full courses (eight modules) of related courses in other fields, as specified under *Related Courses* below.

LITERATURE COURSES

I. The minimum requirement of 8 full courses (16 modules) of literature must include:

A. English 10 (a prerequisite for all other literature courses offered by the Department, except for students with a score of three or better on Advanced Placement or students who have satisfactorily passed the Placement Test given by the Clark English Department). English 10 is to be taken preferably in the freshman year and no later than the sophomore year.

B. Two of the following, normally taken before the junior year: English 13, English 14 (Modules 1 through 4), English 15 (Modules 1 through 4), English 111 (Modules 1 through 4). (Students will not be permitted to combine two modules of English 14, 15, 111 in meeting this requirement.)

C. A minimum of three full courses (6 modules) in courses or seminars at the 200-level.

II. To make sure that students develop some historical perspective and an awareness of the range and variety of English and American literature, all English majors must include in their programs at least:

A. Three full courses (6 modules) dealing with literature written before 1700 (for example, English 15 (Modules 1 and 2), 200, 203, 206, 212 (Modules 1 and 2), 212 (Modules 3 and 4), 215, 216, 217, 218, 220, 222, 224).

B. Three full courses (6 modules) dealing with literature written from 1700 to 1900 (for example, English 13, 14 (Modules 1 and 2), 14 (Modules 3 and 4), 15 (Modules 3 and 4), 111 (Modules 1 and 2), 111 (Modules 3 and 4), 226, 236, 238, 239, 240, 242, 243, 244, 245, 247, 248, 249).

Students should note that certain courses may be counted towards *two* of these requirements (for example, if one takes English 14 (Modules 1 through 4) to satisfy half of requirement I.B., he may also use these two 2-module courses to meet two-thirds of requirement II.B).

Courses in Foreign Literature. A student may count any of the courses listed under "Comparative Literature" towards the English major.

Related Courses. The minimum of four full courses (8 modules) of related courses required of the English major must include two full courses (4 modules) of history and two full courses (4 modules) of philosophy. In all cases these courses must be approved by the student's advisor as being genuinely related to the student's overall program of English studies.

Courses Recommended Outside the Major and Related Fields. Like all undergraduates, the English major must elect at least nine full courses (18 modules) outside his major and its related fields. These courses must be selected from the offerings of the following Departments: Biology, Chemistry, Economics, Education, Fine Arts, Geography, Geology, German, Government and International Relations, Linguistics, Mathematics, Music, Physics, Psychology, Romance Languages, Russian, Sociology, Theatre Art.

Those students who intend to go on to Graduate school should be aware that a reading knowledge of French, German, and Latin is frequently required of doctoral candidates.

Honors Program. Majors are encouraged to apply in the spring of their sophomore year to participate in the Honors Program in English. Further information is available from the Department.

Cooperative Programs. The range of English offerings open to Clark students has been extended by the establishment of a cooperative arrangement with the English Departments at Assumption College and the College of the Holy Cross. With the permission of the Department, majors and graduate students may take a few carefully selected courses in literature at these institutions. Another Consortium program that may be of interest is listed under "Theatre Art."

GRADUATE PROGRAM

The University offers a program leading to the Master of Arts degree in English. A limited number of scholarships providing tuition remission are available for superior students. The department also offers several teaching assistantships, involving half-time teaching and half-time study, with stipends ranging up to $3,200 plus the remission of tuition.

For the Master of Arts, the student must satisfactorily complete at least eight full courses (16 modules) of work, including English 300. Introduction to Graduate Studies, English 280. History of the English Language (Modules 1 and 2 or Modules 3 and 4) (or one of the following courses in the systematic study of language—English 282. Seminar: Old English; Linguistics 285. Semantics; Linguistics 287. Introduction to Linguistics; English 288. Comparative and Historical Linguistics; English 295. Seminar: Teaching English as a Second Language), and at least one seminar. During the third module of his first year in residence, the student must satisfactorily complete English 349. Thesis Workshop; to obtain his degree he must also complete an acceptable master's thesis, English 350 (one full course); he must pass a written Foreign Language Examination (in Greek, Latin, French, German, Italian, Russian, Spanish, or other foreign language approved by the Department); and he must pass a final oral examination.

COURSES

10. INTRODUCTION TO LITERATURE.

This course deals with the basic aspects of the study of poetry, fiction, and drama—such as the handling of diction, imagery, point of view, tone, and structure—but each section has its own set of readings focused on a particular concept or theme. Students will be permitted to make their own choices of section as far as possible. No student may take more than one full course in English 10.

Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

13. ENGLISH POETRY.

This course focuses upon the development of the major forms, themes, and movements of English poetry. It emphasizes intensive study and discussion of individual poems. A series of essays on assigned topics is required. (English majors exempted from

English 10 must take English 13). Offered in Modules 1-2, 3-4.
Full course, Modules 1-2. Modules 1-2, Ms. Hilsinger;
Full course, Modules 3-4. Modules 3-4, Mr. Sultan.

14. ENGLISH NOVEL.

A study of the English novel from its beginning to the end of the nineteenth century. Modules 1-2 include Defoe, Richardson, Fielding, Smollett, Sterne, Jane Austen, and three or four minor novelists. Modules 3-4 consider Scott, Thackeray, Dickens, George Eliot, James, Hardy, Conrad, and two or three minor novelists. Some emphasis is placed on the development of the novel as a literary form.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Cunningham.

15. ENGLISH DRAMA.

A course in the major periods of English drama before the twentieth century. Modules 1-2 cover medieval religious drama and the drama of Tudor and Stuart England. Modules 3-4 cover British drama from 1660 to the earlier twentieth century.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Abraham.

16. CREATIVE WRITING.

A course designed to cultivate and guide student work particularly in the short story, the lyric poem, and the informal essay. Class meetings deal largely with important aspects of the art of fiction; published literary works and student manuscripts are discussed. Not open to freshmen. Offered in Modules 1-2 and repeated in Modules 3-4. Prerequisite: two modules of study in literature taught in any department.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Guarnera.

17. CREATIVE WRITING.

Open to students who have taken English 16 and to other students interested in writing verse. Prerequisite: the same as for English 16. Not open to freshmen.
Full course, Modules 3-4. Mr. Sultan.

18. EXPOSITORY WRITING.

This course is designed to help students improve their expository writing through the study and application of rhetorical methods. Diction, sentence structure, paragraph integrity, theme organization, logic, semantics, persuasion, the relationship of idea to expression and of expression to audience are among the matters analyzed. Offered in Modules 1-2 and repeated in Modules 3-4.
Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

19. INTERMEDIATE COMPOSITION.

Not offered, 1974-75.

This course is designed to help those who have already acquired competence in expository writing to improve their style and effectiveness through practical experience. Special emphasis will be placed on stylistics, techniques of persuasion, and methods of organization through the study of works of established essayists and the close analysis of student papers. Enrollment limited to fifteen students. Offered at the discretion of the Department. Prerequisite: English 18 and consent of the instructor.
Full course, Modules 3-4. Mr. Blinderman.

88. DIRECTED READINGS.*

Variable credit.
Modules 1-2-3-4-5. Staff.

90. SPECIAL PROJECTS.*

Variable credit.
Modules 1-2-3-4-5. Staff.

*Note: When asking an instructor to sponsor DIRECTED READINGS (88) or a SPECIAL PROJECT (90), the student (1) must be able to satisfy the instructor at the time of Advance-Registration that he is competent to deal with the agreed-upon materials primarily as works of literature, and (2) must present a well-thought-out proposal. The student must himself have taken the initiative in conceptualizing the principles on which he will select Readings or carry out a Special Project, and he must have demonstrated competence in determining on specific selections and procedures.

111. AMERICAN LITERATURE.

Through study of representative masterworks, the course traces the main currents of American literature from Puritan times to the

present. Authors read during Modules 1-2 include Sewall, Edwards, Franklin, Cooper, Poe, Hawthorne, Thoreau, Emerson, and Melville; during Modules 3-4, Whitman, Twain, Howells, Dickinson, Adams, Crane, James, Frost, Eliot, Faulkner and Hemingway.
Full course, Modules 1-2. Modules 1-2, Mr. Elliott;
Full course, Modules 3-4. Modules 3-4, Mr. Beard.

120.1. LITERATURE AND LIBERATION I: CONTEMPORARY SCENE.

The course will study the connection between the status of woman in contemporary American society and the image of woman in certain modern works—confession magazines, television programs, movies, and selected fiction and other literature. Offered at the discretion of the Department.
Half course, Module 3. Mr. Blinderman.

120.2. LITERATURE AND LIBERATION II: HISTORICAL SURVEY.

This module will begin with a study of the image of woman in ancient literature (e.g., *Noital Medea*), and proceed to trace the image in later literature of western civilization—medieval, Renaissance, 18th century, and 19th century. Offered at the discretion of the Department.
Half course, Module 4. Mr. Blinderman.

125. THE SHORT STORY.

This course involves the intensive reading of a wide range of stories which exemplify a variety of fictional methods, affording the student some knowledge of the history of this literary type. The primary aim is to help the student develop an appreciation of the broadly human values implicit in the short story.
Offered at the discretion of the Department.
Full course, Modules 1-2.
Full course, Module 5. Mr. Carter.

129. MODERN DRAMA.

A survey, with special emphasis on several major figures, of drama from Ibsen to the present. Modules 1-2 trace the development of naturalism, the emergence of modern realistic drama and early reactions to realism. Modules 3-4 cover the period from World War II to the present and examine several of the major post-war movements and some of the non-dramatic forms which they have produced.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Abraham.

133.1. READING MOVIES I.

This course attempts to bring the educated intelligence to bear on the dominant art experience in modern popular culture. The principal objects of study will be current movies determined by the class. Offered at the discretion of the Department.
Half course, Module 1. Mr. Sultan.

133.2. READING MOVIES II.

A second course for students who have taken Reading Movies I. Every student will formulate a statement of his criteria for judging movies. Offered at the discretion of the Department.
Half course, Module 3. Mr. Sultan.

143. MODERN BRITISH FICTION.

The course deals primarily with the work of four twentieth-century British writers of fiction: Joyce, Lawrence, Woolf, and Durrell.
Full course, Modules 3-4. Ms. Hilsinger.

144. MODERN AMERICAN FICTION.

A critical introduction to the best American fiction from about 1900 to 1960, with emphasis on its aesthetic values, sociological insights, and philosophical implications. Authors read include Dreiser, James, Anderson, Fitzgerald, Hemingway, Capote, Faulkner, Ellison and Mailer.
Full course, Modules 1-2. Mr. Beard.

146. LITERATURE OF THE SIXTIES.

The course will be a survey of contemporary British and American fiction and poetry. Writers to be considered may include Burgess, Hawkes, Golding, Barth, Mailer, Malamud, Bellow, Heller, Vonnegut and representative modern British and American poets.
Full course, Modules 3-4. Mr. Elliott.

150. LITERATURE OF WESTERN CIVILIZATION.

Not offered, 1974-75.

A study of literature basic to the cultural development of western civilization; selections range in subject from mythology to political science, in type from epic poem to the essay, and in time from Greek antiquity to the Renaissance. Offered at the discretion of the Department.

Full course, Modules 1-2. Mr. Blinderman.

161. ADVANCED CREATIVE WRITING.

A course for serious and working undergraduate literary artists. Admission by consent of the instructor, who will require a sample of the student's work. Enrollment limited to ten. Offered at the discretion of the Department.

Half course, Module 5. Mr. Sultan.

200. SEMINAR: OLD NORSE SAGAS.

A study of the major works written during the great flowering of literature in medieval Iceland, with particular emphasis on the Old Norse sagas. All works will be read in translation, but interested students will be given an opportunity to learn Old Norse. Offered at the discretion of the Department.

Full course, Modules 3-4. Mr. Anderson.

203. MEDIEVAL LITERATURE.

A study of the literature of Western Europe before 1500. The works read include epics such as *Beowulf, The Song of Roland, The Nibelungenlied,* and the *Njal's Saga;* historical writings and folk tales important in the development of the Arthur story; romances such as *Perceval, Tristan and Isolde,* and *Gawain and the Green Knight;* Dante's *Divine Comedy; Inferno;* selections from Chaucer's *Canterbury Tales.*

Full course, Modules 1-2. Mr. Anderson.

206. SEMINAR: CHAUCER.

An introduction to Middle English grammar, pronunciation, and scansion, and a study of *Troilus and Criseide* and the best of the *Canterbury Tales,* followed by a more rapid reading of at least three of Chaucer's earlier works, such as *The Book of the Duchess, The House of Fame, The Parliament of Fowls,* and *The Legend of Good Women.* Prerequisite: consent of the instructor.

Full course, Module 5. Mr. Anderson.

212. SHAKESPEARE.

Approximately twenty plays, with supplementary critical essays, are read through the year as a basis for a study of Shakespeare's development as a dramatist and his changing attitude toward life. Modules 3 and 4 are devoted mainly to a careful analysis of *Hamlet, Othello, Lear, Macbeth,* and *Antony and Cleopatra.*

Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Anderson.

216. THE RENAISSANCE IN ENGLAND.

From Thomas More's book on nowhere-at-all (called Utopia) to Shakespeare's witches who argue, in *Macbeth,* that "Fair is foul and foul is fair," to the metaphysical poetry of John Donne, this course will examine equivocation as the mode of thought and response in the sixteenth century, a century torn by the Protestant discoveries of Copernicus; the economic rise of capitalism; the wars with Spain (and the Spanish Armada); and the quiet political revolution—from monarchy to government by Parliament. Offered at the discretion of the Department.

Full course, Modules 3-4. Mr. Kinney.

217. SEMINAR: JONSON.

Not offered, 1974-75.

An intensive study of Ben Jonson's dramatic and non-dramatic works. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Half course, Module 3. Mr. Carter.

218. SEMINAR: DONNE.

Not offered, 1974-75.

An exploration of Donne's poetry and selected prose. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Half course, Module 4. Mr. Carter.

220. SEMINAR: SEVENTEENTH CENTURY.

Not offered, 1974-75.

A study of selected Metaphysical and Cavalier poets, masterpieces of seventeenth-century prose, and the rise of English neoclassicism. Offered in alternate years. Prerequisite: consent of the instructor.

Full course, Modules 1-2. Mr. Carter.

222. SEMINAR: MILTON.

Not offered, 1974-75.

An intensive reading of Milton's poems and selected prose. Offered in alternate years. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Carter.

224. SEMINAR: THE RADICAL MODE OF RESTORATION COMEDY.

An investigation of the radical aspects of Restoration Comedy, including among other things, its exclusiveness, its anti-establishment posture, and its preoccupation with sexuality and perversion. Parallels will be drawn to some other radical dramatic movements, such as the Theatre of Cruelty and the contemporary Black theatre. Offered at the discretion of the Department. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Abraham.

226.1. SEMINAR: STUDIES IN 18TH CENTURY LITERATURE I. THE AUGUSTANS: POPE, SWIFT AND GAY.

This module will concern itself primarily with the poetry of Pope, with Swift's poems and essays, as well as *Gulliver's Travels,* and with Gay largely through his *Beggar's Opera.* As these authors tend to be intensely topical and satirical, substantial effort will be made to relate them and their writings to the literature, life, and thought of the times. Offered in alternate years. Prerequisite: consent of the instructor.
Half course, Module 1. Mr. Carter.

226.2. SEMINAR: STUDIES IN 18TH CENTURY LITERATURE II. THE AGE OF JOHNSON.

Although this module will focus on James Boswell and Samuel Johnson, it will also deal with a number of eighteenth century poets (to be selected from the following: James Thomson, William Collins, Thomas Gray, Christopher Smart, Oliver Goldsmith, Thomas Chatterton, William Cowper, George Crabbe) and with at least two eighteenth-century dramatists—Goldsmith and Sheridan. The course will be designed flexibly enough to permit students to investigate other contemporary figures in related arts or disciplines (e.g., Bernard Mandeville, David Hume, Edward Gibbon, Sir Joshua Reynolds, Edward Burke). Offered in alternate years. Prerequisite: consent of the instructor.
Half course, Module 2. Mr. Carter.

236. BRITISH ROMANTIC LITERATURE.

Not offered, 1974-75.

This course will identify the pre-Romantic sources of the British Romantic movement and will focus on the study of the prose, poetry, and other artifacts of representative writers of that movement.
Full course, Modules 1-2. Mr. Blinderman.

238. SEMINAR: WILLIAM BLAKE.

An analysis of the poems and of a selection of the Prophetic Books of Blake, including some consideration of Blake as graphic artist. Offered at the discretion of the Department. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Carter.

239. SEMINAR: AMERICAN LITERARY RENAISSANCE.

Not offered, 1974-75.

This course will explore characteristic writings of Emerson, Thoreau, Hawthorne, Melville, and Whitman; consider their personal and literary interrelations; and seek to evaluate their artistic and cultural influences in the larger context of American society. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Beard.

240. POE, HAWTHORNE AND MELVILLE.

Not offered, 1974-75.

A study of selected short stories, longer fiction, and criticism by Poe, Hawthorne, and Melville; their philosophical assumptions, symbolic techniques, and artistic accomplishments. Primarily for advanced undergraduates and graduate students. Offered at the discretion of the Department. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Beard.

242.1. VICTORIAN LITERATURE I: AGE OF PROSE.

This first of four modules on Victorian Literature will concentrate on selected prose articles expressing the major -isms of the age: Tractarianism, Utilitarianism, Darwinism, Evangelicalism. Offered at the discretion of the Department.
Half course, Module 1. Mr. Blinderman.

242.2. VICTORIAN LITERATURE II: TENNYSON AND BROWNING.

This second of four modules on Victorian Literature will concentrate on the poetry of the age, particularly on the poetry of Tennyson and Browning. Offered at the discretion of the Department.

Half course, Module 2. Mr. Blinderman.

242.3. VICTORIAN LITERATURE III: THE PRE-RAPHAELITES.

This third of four modules on Victorian Literature will concentrate on the paintings, prose writings and poetry of the Pre-Raphaelite movement. We will study the works of (among others) Christina Rossetti, Dante Rossetti, and William Morris. Offered at the discretion of the Department.

Half course, Module 3. Mr. Blinderman.

242.4. VICTORIAN LITERATURE IV: DECADENCE.

This fourth of four modules on Victorian Literature will concentrate on the productions of the decadents, among them Swinburne, Pater, Beardsley, and Wilde. Offered at the discretion of the Department.

Half course, Module 4. Mr. Blinderman.

243. VICTORIAN COUNTER-CULTURE.

A new course, the Victorian Counter-Culture will attempt to identify the mainstream of Victorian values and then those movements, events and circumstances which ran counter to it—such as crime, pornography, atheism, free love, utopianism. Offered at the discretion of the Department.

Full course, Module 5. Mr. Blinderman.

244. SEMINAR: ROMANTIC AND VICTORIAN GOTHIC.

Not offered 1974-75.

The seminar will call forth the Gothic spirit from its incarnations in architecture, painting, and literature—graveyard poetry, Gothic novels, *Frankenstein.* Films and field trip.

Full course, Modules 1-2. Mr. Blinderman.

245. SEMINAR: DARWINISM.

This seminar, of an interdisciplinary nature, is devoted to the study of original and research materials elucidating the scientific, philosophical, religious and social dimensions of Darwinism. The course examines chiefly the survival of the fittest Darwinian ideas in English and American literature. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Full course, Modules 1-2. Mr. Blinderman.

247. SEMINAR: DICKENS.

This seminar will consider Dickens as a humorist, an artist, and a social critic in the light of his time and its relevance to ours. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Full course, Modules 1-2. Ms. Cunningham.

248. SEMINAR: THE BRONTËS AND HARDY.

A study of selected poetry and fiction of Charlotte, Emily and Anne Brontë and of Thomas Hardy: their dramatic affinities, their cosmic vision, their literary techniques. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Full course, Modules 3-4. Ms. Cunningham.

249. SEMINAR: TWAIN, HOWELLS AND JAMES.

The course will explore the artistic assumptions and impulses underlying American Realism through selected novels and criticism of America's three greatest realistic novelists. Some attention will also be given to DeForrest, Jewett, Frederic and some writers of tall tales. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Full course, Modules 1-2. Mr. Elliott.

251. THE CIVIL WAR IN LITERATURE, 1860-1960.

To explore and evaluate the effects of the Civil War on selected American authors. The course will include some background on economic, political and historical events related to the Civil War and examine how different authors come to terms with American conditions like slavery, industrialization, the Myth of the South, etc. Offered at the discretion of the Department.

Full course, Module 5. Mr. Elliott.

252. SEMINAR: JOSEPH CONRAD.

A study of his work. Offered at the discretion of the Department. Prerequisite: consent of the instructor.
Half course, Module 2. Mr. Sultan.

253. SEMINAR: MODERN AMERICAN DRAMA.

Not offered, 1974-75.

An examination of significant movements, figures, and plays in the development of twentieth-century American drama. Dramatists studied include O'Neill, Behrman, Odets, Anderson, Miller, Williams, and Albee. Offered at the discretion of the Department. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Beard.

254.1 SEMINAR: NATURALISM IN AMERICAN FICTION I. BACKGROUND—EUROPEAN AND AMERICAN NATURALISTS.

We will read selections from Social Darwinists and philosophers relevant to Naturalistic Fiction. In addition, this module will deal with some selected American Naturalistic writers like Garland, Norris, Crane, London, Dreiser, Farrell. Offered at the discretion of the Department. Prerequisite: consent of the instructor.
Half course, Module 3. Mr. Elliott.

254.2. SEMINAR: NATURALISM IN AMERICAN FICTION II. AMERICAN NATURALISM.

This module will deal in depth with two or three American Naturalistic writers selected from the above list—probably London and Dreiser. Offered at the discretion of the Department. Module 3 is a prerequisite for enrollment in Module 4.
Half course, Module 4. Mr. Elliott.

255. SEMINAR: JAMES JOYCE.

A seminar surveying the full range of Joyce's creative work. Offered at the discretion of the Department. Prerequisite: consent of the instructor.
Half course, Module 4. Mr. Sultan.

256. SEMINAR: THE IRISH DRAMATIC TRADITION.

Not offered, 1974-75.

This course will explore the striking continuity of Irish themes in drama, from the Restoration to the modern period. While much time will be devoted to close readings of plays by Yeats, Synge, and O'Casey, special attention will be given, as well, to the definition of some peculiarly Irish characteristics of other playwrights with Irish backgrounds, such as Congreve, Farquhar, Sheridan, Wilde, O'Neill, and Beckett. Offered at the discretion of the Department. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Abraham.

257. SEMINAR: THE IRISH LITERARY MOVEMENT.

A course in the inception, development and effect of the literary movement during the end of the last century and the first decades of this one that created an Irish literature in English. Writers studied include Yeats, Joyce, Synge and O'Casey. The cultural, historical and political backgrounds of Anglo-Irish literature are also studied. Offered at the discretion of the Department. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Sultan.

258. SEMINAR: CONRAD, LAWRENCE AND JOYCE.

Not offered, 1974-75.

This course deals with the development and accomplishment in the genres of the short story and the novel of three major writers of fiction of the twentieth century. Offered at the discretion of the Department. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Sultan.

259. THE BEGINNINGS OF MODERNIST POETRY.

Not offered, 1974-75.

The development of Modernism studied through the poetry of Dickinson, Hopkins, Hardy, the early Yeats, et al., and through significant related documents. Offered at the discretion of the Department. Prerequisite: consent of the instructor.
Half course. Mr. Sultan.

260. MODERNIST AND RECENT POETRY.

Not offered, 1974-75.

Poetry since the rise of Modernism about the time of the First World War. Offered at the discretion of the Department. Prerequisite: "The Beginnings of Modernist Poetry" or the equivalent.

Half course. Mr. Sultan.

261. SEMINAR: YEATS.

Not offered, 1974-75.

A seminar in Yeats' lyric poetry. Offered at the discretion of the Department. Prerequisite: "The Beginnings of Modernist Poetry," "Joyce," or consent of the instructor.

Half course. Mr. Sultan.

262. SEMINAR: FIVE TWENTIETH-CENTURY POETS.

Not offered, 1974-75.

A seminar in the lyric poetry of Yeats, Eliot, Auden, Thomas, and a poet selected by the class, for students who have taken English 259 (Modernist Poetry) or the equivalent. Offered in alternate years. Prerequisite: consent of the instructor.

Full course, Modules 1-2. Mr. Sultan.

263. SEMINAR: D. H. LAWRENCE.

A study of his work, principally his fiction. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Half course, Module 5. Mr. Sultan.

264. SEMINAR: T. S. ELIOT.

An intensive study of the major poems, plays and critical essays of T. S. Eliot. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Full course, Modules 1-2. Ms. Hilsinger.

265. SEMINAR: BLOOMSBURY GROUP.

Not offered 1974-75.

This seminar will consider the aesthetic and social theories expressed in the novels of Virginia Woolf and E. M. Forster and in the essays of these and other members of the Bloomsbury Circle. Prerequisite: consent of the instructor.

Full course, Modules 1-2. Ms. Hilsinger.

266. SEMINAR: VIRGINIA WOOLF.

An intensive study of Mrs. Woolf's nine novels, her short stories, her major essays, and her diary. The course will emphasize the artistic process as well as the vision of Mrs. Woolf's work, and it will consider such collateral issues as Mrs. Woolf's critical stance and her feminism. Offered at the discretion of the Department Prerequisite: consent of the instructor.

Full course, Modules 1-2. Ms. Hilsinger.

267. SEMINAR: SPECIAL STUDIES IN TWENTIETH-CENTURY AMERICAN LITERATURE.

A seminar devoted to the intensive study of a twentieth-century writer or small group of writers—Hemingway and Faulkner in 1974. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Full course, Modules 1-2. Mr. Beard.

268. SEMINAR: EUGENE O'NEILL.

Intensive reading and study of selected plays, from the one-acters to *Long Day's Journey into Night,* including some background in theatrical movements directly affecting O'Neill. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Half course, Module 4. Mr. Beard.

273. SEMINAR: F. SCOTT FITZGERALD AND THE TWENTIES.

Using Fitzgerald's life and writings as a convenient and indicative matrix, the course will explore the Twenties as a period rich in avant garde creativity, significantly assessing and re-defining traditional literary values and forms. Writers other than Fitzgerald to be considered include Gertrude Stein, Sherwood Anderson, Ernest Hemingway, Sinclair Lewis, William Faulkner, H. L. Mencken, Ezra Pound, T. S. Eliot, E. E. Cummings, William Carlos Williams, Wallace Stevens, and Eugene O'Neill. Some attention will be given to Jazz and its chief classical proponent George Gershwin, and to prominent artists from the popular John Held, Jr., to Picasso. Magazines such as the *The Smart Set* and *The Dial* will be examined and a visit to the great Dial Collection at the Worcester Art Museum scheduled. Offered at the discretion of the Department.

Full course, Module 5. Mr. Beard.

277. SEMINAR: MODERN CONTINENTAL FICTION.

Not offered, 1974-75.

Masterpieces by modern European novelists (Flaubert, Turgenev, Tolstoy, Dostoyevsky, Gide, Proust, Mann, Kafka and Camus) are studied in translation, with special attention to their formal philosophical, moral, social, political, and psychological values. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Full course, Modules 3-4. Mr. Beard.

278. SPECIAL STUDIES IN TWENTIETH-CENTURY LITERATURE.

Tutorial with individual students who will evolve and develop their own projects in English literature or comparative literature (English and French, Spanish, German, or English and more than one of the others). Projects need not be critical papers. Translation, studies in the sociology of literature, the editing of private papers and other projects may be undertaken. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Half course, Module 5. Mr. Sultan.

291. SEMINAR: THE CONCEPT OF TRAGEDY.

Not offered, 1974-75.

Through the study of approximately twenty plays, three novels, and a number of poems, from the Greek and Hebrew origins of Western Culture to the present time, this course analyzes the nature of Tragedy, the changes which this concept has undergone, the relation of these changes to shifting views of man and the universe, and the significance of the study of tragedy to us today. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Full course, Modules 3-4. Mr. Anderson.

292. THE PROTESTING VOICE AND THE INDIGNANT EYE: SATIRE IN LITERATURE AND THE VISUAL ARTS.

A survey of the range and vitality of the genre of SATIRE in *literature* from Aristophanes to the present and in *the visual arts* from the fifteenth century to Picasso. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Full course, Modules 3-4. Mr. Carter.

293. WORKSHOP IN SECONDARY ENGLISH CURRICULUM.

A study of new approaches to English curriculum and preparation for practice teaching (visiting schools, observing classes, some apprentice teaching and tutoring, and work sessions with cooperating teachers).

Full course, Modules 1-2. Staff.

294. MATERIALS AND METHODS IN TEACHING SECONDARY ENGLISH.

Review and application of specific materials and techniques in the teaching of writing and poetry. A seminar involving student interns, specialists, and experienced teachers.

Full course, Modules 3-4. Staff.

295. TEACHING ENGLISH AS A SECOND LANGUAGE.

Not offered, 1974-75.

This course covers the principles and practice of second language teaching, with emphasis on the application of modern linguistics to the teaching of English as a second language. Offered at the discretion of the Department. Prerequisite: consent of the instructor.

Full course, Modules 3-4. Mr. Macris.

English 297. DRAMA AND THE MIND'S EYE.

An experimental methods course in developing an understanding of the relationship between the theatrical (i.e., production) and literary dimensions of a play.

Full course, Module 5. Mr. Abraham.

298. SEMINAR: THE MYTHOPOETIC MODE.

This seminar explores the vision and epistemology of mythopoetic literature. Works read and discussed include Shakespeare's *Henriad,* Milton's *Paradise Lost,* Bronte's *Wuthering Heights,* Melville's *Moby Dick,* and Eliot's *Four Quartets.* Candidates for honors in English should elect this seminar in their junior year. Prerequisite: consent of the instructor.

Full course, Modules 3-4. Ms. Hilsinger.

299. HONORS IN ENGLISH: SENIOR YEAR.

Full course. Staff.

300. INTRODUCTION TO GRADUATE STUDIES.

This course is devoted to an intensive general study of the three principal areas in the discipline—bibliography and textual analysis, literary history, and literary criticism—and to the relationships among them. In the study of literary criticism, alternative theoretical approaches and applications of them are examined. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Sultan.

301. SEMINAR: SPECIAL STUDIES IN MEDIEVAL LITERATURE.

An opportunity for students with a good background in Medieval Literature to study some selected problems of interpretation or evaluation. The specific topic or issue will be determined by the students enrolled, in cooperation with the instructor. Offered at the discretion of the Department. Prerequisite: English 203 or English 206 (or the equivalent). Seniors by special permission only.
Half course, Module 4. Mr. Anderson.

305. SEMINAR: SPECIAL STUDIES IN SHAKESPEARE.

An opportunity for students with a good background in Shakespeare to study some selected problem of interpretation or evaluation. The specific topic or issue will be determined by the students enrolled, in cooperation with the instructor. Offered at the discretion of the Department. Prerequisite: English 212 (or the equivalent). Seniors by special permission only.
Half course, Module 3. Mr. Anderson.

349. THESIS WORKSHOP.

This seminar involves the *doing*—though not necessarily the completion—of a scholarly-critical project in literature on a professional level. The entire process from initial formulation to final presentation will be considered in the context of the specific individual projects of students in the group. A prerequisite is active commitment to and involvement in such a project. While intended primarily for graduate students in English, undergraduates with appropriate projects—honors theses, for example—from English and allied disciplines may be accepted by permission.
Full course, Module 3. Mr. Beard

350. MASTER'S THESIS.

Prerequisite: consent of Chairman or Director of Graduate Studies.
Full course. Staff.

388. GRADUATE DIRECTED READINGS.

Variable credit. Staff.

COMPARATIVE LITERATURE

The following course in Comparative Literature may be taken for credit toward the English major:

Comp. Lit. 118. LITERATURE AND THE NATURE OF MAN.

Refer to description under department of Foreign Languages.
Mr. King.
Mr. Anderson.

LINGUISTICS

Linguistics 115. MAN AND LANGUAGE.

Refer to description under catalog section on Linguistics.
Mr. Reid.

Linguistics 260. LINGUISTICS AND LANGUAGE LEARNING.

Refer to description under catalog section on Linguistics.
Mr. Reid.

English 280. HISTORY OF THE ENGLISH LANGUAGE.

Modules 1 and 2 deal with the development of the phonology and lexicon of English, viewed as a dynamic series of systems. The course also describes the homeland, language, and culture of the Proto-Indo-Europeans as background for a treatment of the structural relationships between English and other languages of the Indo-European family. Modules 3 and 4 concentrate on the

development of the grammar of English, also treated dynamically and systemically. The course includes an analysis of the establishment of Standard British English, the doctrine of correctness, and the growth of Modern American English in its sociocultural setting. Prerequisite: consent of the instructor. Only the first half of this course will be offered in 1974-75.
Full course, Modules 1-2. Mr. Macris.

English 281. INTRODUCTION TO OLD NORSE.

A study of Old Norse grammar and syntax as preparation for reading Old Norse prose (passages from *Prose Edda,* Family Sagas, and *Vinland Sagas).* Main emphasis will be on reading. Offered at the discretion of the Department.
Half course, Module 5. Mr. Anderson.

English 282. SEMINAR: OLD ENGLISH.

Not offered, 1974-75.

An introduction to Old English language and literature. The works read include King Alfred's preface to Pope Gregory's *Pastoral Care* and selections from the West Saxon Gospels, from the Old English translation of the Heptateuch, from Aelfric's *Colloquy,* from the Anglo-Saxon Chronicle, and from the Old English translation of Bede's *Historia Ecclesiastica Gentis Anglorum.* Offered at the discretion of the Department. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Macris.

English 284. SEMINAR: MODERN AMERICAN ENGLISH.

This seminar analyzes the grammatical structure of Modern American English. It concentrates on an evaluation system for handling spoken and written English and the application of this system to problems of current English usage. The relevance of linguistic theory and methodology of the teaching of English receives special attention. Offered at the discretion of the Department. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Macris.

Linguistics 285. SEMANTICS.

Refer to description under catalog section on Linguistics.
Mr. Macris.

English 286. SEMINAR: LINGUISTIC APPROACHES TO LITERATURE.

Not offered, 1974-75.

A study of what modern linguistics has to offer in the analysis and criticism of literature, with special attention to the contributions of the generative-transformational, tagmemic, and parametric approaches. Offered at the discretion of the Department. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Macris.

Linguistics 287. INTRODUCTION TO LINGUISTICS.

Refer to description under catalog section on Linguistics.
Mr. Macris.

Linguistics 288. COMPARATIVE AND HISTORICAL LINGUISTICS.

Refer to description under catalog section on Linguistics.
Mr. Macris.

THEATRE ART

The following courses in Theatre Art may be taken for credit toward the English major:

Theatre Art 10. INTRODUCTION TO DRAMA.

Refer to description under Theatre Art.
Mr. Schroeder.

Theatre Art 168. BRECHT AND THE EPIC THEATRE.

Refer to description under Theatre Art.
Mr. Raviv.

Theatre Art 181. EUGENE O'NEILL.

Not offered, 1974-75.

Refer to description under Theatre Art.
Mr. Schroeder.

Theatre Art 182. MODERN DRAMA: DEPARTURES FROM REALISM.

Refer to description under Theatre Art.

Mr. Raviv.

Theatre Art 183. THE THEATRE AS A VEHICLE FOR PROTEST AND PROPAGANDA IN TIMES OF SOCIAL CHANGE.

Refer to description under Theatre Art.

Mr. Raviv.

Theatre Art 184. THE GOLDEN AGE OF YIDDISH THEATRE.

Refer to description under Theatre Art.

Mr. Schroeder.

Theatre Art 185. TENNESSEE WILLIAMS.

Refer to description under Theatre Art.

Mr. Schroeder.

Theatre Art 281. SEMINAR: SPECIAL STUDIES IN RENAISSANCE DRAMA.

Refer to description under Theatre Art.

Mr. Schroeder.

Theatre Art 286. SEMINAR: IBSEN.

Refer to description under Theatre Art.

Mr. Schroeder.

FOREIGN LANGUAGES AND LITERATURES

DEPARTMENT FACULTY

Walter Schatzberg, Ph.D., Associate Professor of German, Department Chairman
Karl J. R. Arndt, Ph.D., Professor of German
Raymond E. Barbera, Ph.D., Professor of Romance Languages
J. Richard Reid, Ph.D., Professor of Romance Languages
Kenneth Hughes, Ph.D., Associate Professor of German
Hartmut Kaiser, Ph.D., Associate Professor of German
J. Fannin King, M.A., Associate Professor of Romance Languages
Michael K. Spingler, Ph.D., Associate Professor of French
Marvin A. D'Lugo, Ph.D., Assistant Professor of Spanish
Pierre L. Horn, M.A., Assistant Professor of French
Irene Kriskijans, M.A., Visiting Assistant Professor of Russian
Zeev Raviv, D.F.A., Associate Professor of Theatre Art, Coordinator of Jewish Studies Program
Lori R. Toepel, Ph.D., Visiting Assistant Professor of Classics
Carol D'Lugo, M.A., Lecturer in Spanish
William E. Kaufman, Ph.D., Lecturer in Jewish Studies
Joseph Klein, D.D., Lecturer in Biblical Literature
Harold S. Kushner, Ph.D., Lecturer in Jewish Studies
Gale H. Nigrosh, M.A.T., Lecturer in French
Lieselotte Overvold, M.A., Lecturer in German
Miriam Raviv, B.A., Lecturer in Hebrew
Catherine Q. Spingler, M.A., Lecturer in French
Israel Gordon, Rabbi, Instructor in Yiddish, Professor Emeritus in Residence
Claude W. Barlow, Ph.D., Professor of Classics, Emeritus

UNDERGRADUATE PROGRAM

Students desiring to major in the field of Foreign Languages may choose among a variety of programs to meet their particular interests as to language, literature and culture. These may be designated as: in French, in German, in Spanish, in Romance Languages, or in Foreign Languages according to the program chosen. With a departmental advisor the student works out an appropriate structure for his major, in accordance with the following guidelines:

1. A minimum of eight full advanced courses beyond French 131, German 12, Spanish 131 if the major is French, German or Spanish respectively. The major in Romance Languages and Foreign Languages involves a combination of courses in more than one language.
2. At least four full advanced courses are to be chosen from courses in related fields such as English literature, Comparative literature, Foreign literature in translation, Linguistics, History, Philosophy, Fine Arts and Music.
3. At least nine full advanced courses must be chosen from outside Group C (language and literature).

Comparative Literature. The department also offers a major in Comparative literature and other interdisciplinary studies involving literature, history, philosophy and psychology. These programs are designed by the student together with a committee of two to three faculty members. Recommended courses are all those designated as Comparative Literature, Foreign Literature and Foreign Literature in translation, as well as the following; English 129, 202b, 207b, 214a, 227b, 245b; History 218a, 218b; Philosophy 14a, 14b, 19b, 121a, 122b, 123b, 124a, 140a; Psychology 221b, 228b, 231b.

Study Abroad: The department encourages all students to study abroad either for a summer, one semester or an entire year. Through the university's affiliation with the Institute of European Studies, campuses in Vienna, Freiburg, Paris, Nantes, Madrid, Durham and London are readily accessible to Clark students. For further information and to explore possibilities contact Mr. Schatzberg.

Language Dormitory: French and Spanish corridors with native speakers in residence are available in Dana Residence Center. Interested students should notify the departmental secretary.

FOREIGN LANGUAGE AND LITERATURE COURSES TAUGHT IN THE LANGUAGE

FRENCH

French 11. ELEMENTARY.

For beginners with no background in the language. Grounding in all four language skills (hearing, speaking, reading, writing) as preparations for subsequent courses conducted in the language. Four class meetings a week plus three half-hour periods of individual work in the language laboratory. Indivisible course.

Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Spingler.

French 11. ELEMENTARY (ADVANCED SECTION).

A fresh start for students with some previous exposure to the language but who are not yet prepared to enter the intermediate course. Designed to impart an active knowledge of French, through grammar study and oral practice, in class and in the language laboratory, with integrated short readings in French prose, poetry, and theater. Indivisible course.

Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Nigrosh.

French 12. INTERMEDIATE.

Review of French grammar. Reading and discussion of provocative works in journalistic and literary prose, as well as poetry and theater, to acquaint students with outstanding personalities and ideas in French literature. Conducted in French. Individual work in the language laboratory. Prerequisite: French 11 or equivalent background in the language.

Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Spingler, Ms. Nigrosh.

French 127. SPEAKING FRENCH: INTERMEDIATE LEVEL.

The goal of the course is to increase the oral fluency of the intermediate student of French.

Some class discussions will focus on examples of French culture in our own environment. Trips around Worcester and Boston to see films and visit museums will provide the stimuli for these discussions.

Other topics of conversation will be based on group interest.

Prerequisite: French 11.
Full course, Module 5. Ms. Spingler.

French 131. READINGS IN FRENCH LITERATURE.

Third-year level. The emphasis in the first semester is mainly on the study of 20th century literature analyzed with respect to theme, tone, symbol, character, and plot. The second semester deals with literary and social aspects of outstanding modern authors. Conducted in French. Prerequisite: the first semester of French 12 or equivalent skill in the language, to be determined by placement.

Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Horn, Mr. King, Mr. Spingler.

French 132. THE LITERATURE OF EXISTENTIALISM.

Third-year level. An examination of the representative works of Sartre and Camus, with special emphasis on their novels and theater. In addition we will also look at their sociopolitical writings (on the death penalty and on antisemitism). Conducted in French. Prerequisite: French 131 or equivalent skill in the language. Admission subject to the consent of the instructor.

Full course, Modules 1-2. Mr. Horn.

French 133. THE GROUPE DE MÉDAN: NATURALIST PROSE AND DRAMA.

Not offered, 1974-75.

Third-year level. An in-depth study of the Naturalist school, as exemplified by the novels of Zola, Maupassant, the Goncourt brothers, the plays of Becque and the *théâtre libre* of Antoine. Conducted in French. Prerequisite: the first semester of French 131 or equivalent skill in the language. Admission subject to the consent of the instructor.

Full course, Modules 3-4. Mr. Horn.

French 134. THE GREEK MYTH IN MODERN FRENCH THEATER.

Not offered, 1974-75.

Third-year level. Readings and discussions on the adaptation of the Greek myth to reflect the changing views of man and his universe, as portrayed in selected plays by Gide, Anouilh, Sartre, and others. Conducted in French. Prerequisite: First semester of French 131 or equivalent skill in the language. Admission subject to the consent of the instructor.

Full course, Modules 3-4. Mr. Horn.

French 137. ORAL AND WRITTEN FRENCH.

The aim of this third-year course is to perfect skills in communication both oral and written. In the first semester, particular attention is given to the sounds of French and to its rhythm and melodic patterns. In the second semester, somewhat more attention is given to grammatical patterns and written French and fluency in the spoken language. Conducted in French. Meets twice a week for two hours plus three half-hour periods in the Language Laboratory. Prerequisite: Grade of B- or higher in French 12, or equivalent skill in the language, to be determined by a placement test. Admission subject to consent of instructor.

Full course, Modules 1-2.

Full course, Modules 3-4. Mr. King.

French 165. FRENCH PLAY PRODUCTION.

A course designed to provide direct experience of the theatrical synthesis within which the play and the actor operate. The course will concentrate on one playwright, studying him in terms of all the problems peculiar to the staging of his plays, sets, props, costumes, acting styles, gesture and blocking. The practical aspects will be synthesized with academic research into the dramaturgy, themes, social context and style of the author's period. Possible playwrights to be studied: Molière, Marivaux, Ionesco, Beckett. For the fall of 1974, the playwright will be Jean Anouilh. Prerequisite: speaking knowledge of French and consent of the instructor. Given in French.

Full course, Modules 1-2. Mr. Spingler.

French 180. INTERPRETING.

An intensive and thorough grounding in the techniques and methods of simultaneous and consecutive interpreting in both French to English and English to French. Prerequisite: good knowledge of French to be determined by oral placement test and permission of instructor.

Full course, Module 3-4. Mr. Horn.

French 181. TRANSLATING.

Not offered, 1974-75.

An intensive and thorough grounding in the techniques and methods of translation in both French to English and English to French. Class time will be divided in two parts: a) for the translation of scientific, social scientific and literary essays; and b) for the translation of an anthology of French short stories with a view to publishing them: the topic for Spring 1974 is "Histoires fantastiques, surnaturelles et horribles." Prerequisite: good knowledge of French to be determined by a placement test or permission of instructor.

Mr. Horn.

French 241. GENERAL VIEW OF FRENCH LITERATURE.

Not offered, 1974-75.

From the beginning of the Age of Enlightenment to the Early Twentieth Century. An interpretation of the main currents of French literature between the age of Louis XIV and the First World War. Each period is studied concentrating on a limited number of authors or schools so as to best represent the characteristics of the period, social and philosophic as well as literary. Conducted in French. Prerequisite: Grade of B- or higher in a third year course.

Mr. King.

French 241. GENERAL VIEW OF FRENCH LITERATURE.

Not offered, 1974-75.

From the Middle Ages through the Age of Louis XIV. An interpretation of the main currents of French literature from the *Chanson de Roland* through the period of the great classicists of the seventeenth century. Each period is studied concentrating on a limited number of authors or schools so as to best represent the characteristics of the period, social and philosophic as well as literary. Conducted in French.

Mr. King.

French 251. EPIC AND ROMANCE, *THE CHANSON DE ROLAND AND THE ROMAN DE TRISTAN ET ISEUT.*

A study principally in modern French translation of the outstanding literary achievements of medieval French literature with particular attention to the *Chanson de Roland* and the *Roman de Tristan et Iseut.* The development of lyric poetry will be briefly treated with closer study of François Villon. The origins of medieval theater will be studied with the fifteenth-century *Farce de Maître Pathelin* analyzed in detail.

Half course, Module 1. Mr. King.

French 252. RENAISSANCE IMAGINATION, FICTION WRITERS OF THE RENAISSANCE.

Prose fiction writers of the renaissance will be studied, particularly selections from Rabelais' unclassifiable masterpiece, *Gargantua et Pantagruel,* Marguerite de Navarre's *Heptaméron,* Bonaventure des Périers's *Nouvelles récréations et joyeux devis,* Noel du Fail's *Les Propos rustiques et facétieux.* Some attention will be given to other prose writers of the sixteenth century.

Half course, Module 2. Mr. King.

French 253.1. FLAUBERT.

An in-depth study of his major novels and short stories.

Half course, Module 3. Mr. Horn.

French 253.2. LES FLEURS DU MAL.

A detailed analysis of the most important work of nineteenth-century French poetry.

Half course, Module 4. Mr. Horn.

French 254. THE MODERN PERIOD.

Not offered, 1974-75.

A study of some outstanding dramatists, novelists and poets to illustrate the diverse literary attitudes characteristic of 20th-century French literature. Conducted in French. Admission subject to the consent of the instructor.

Mr. Horn.

French 255. THE MODERN FRENCH THEATRE.

A study of the origins and development of *le théâtre nouveau* with emphasis on dramaturgy and *mise en scène.* The focus of the course is upon the theatre since 1950 especially Ionesco, Beckett, Genet and Arrabal, but the course also explores the affinities between these playwrights and the Dada and Surrealist movements, and studies three precursors: Jarry, Ghelderode and Artaud. Given in French.

Full course, Modules 3-4. Mr. Spingler.

French 256. FRENCH CLASSICAL TRAGEDY.

An intensive study of some of Corneille's and Racine's major tragedies. These will be analyzed closely from the point of view of dramaturgy, structure, and myth.

Full course, Modules 1-2. Mr. Spingler.

French 257. FRENCH POETRY FROM CHARLES D'ORLÉANS TO THE BAROQUE (1400-1630).

Not offered, 1974-75.

The main currents of French poetry from the last of the great medieval poets to the beginning of the classical period. Special attention will be given to Charles d'Orléans, François Villon, Clément Marot, Joachim du Bellay, and Pierre de Ronsard.

Conducted in French. Admission subject to the consent of the instructor.
Full course, Modules 3-4. Mr. King.

French 258. EXPERIMENTS IN SELF-CONSCIOUS NARRATIVE: NOVEL AND AUTOBIOGRAPHY.

A study of contemporary French prose from the point of view of the author's self-affirmation through narrative. The problem of a possibly blurred division between fact and fiction, history and myth, will be explored through a study of novels and autobiographies of Gide, Sartre, Genet, Beckett, Michel Leiris and Henri Michaux.
Full course, Modules 1-2. Mr. Spingler.

French 261. SENIOR TUTORIAL.

A program of extensive readings and of tutorial meetings designed to provide the student with a broad view of the whole of French literature. The readings will be planned individually for each student in order to complement his previous course work.
Staff.

French 106. SPECIAL TOPICS IN FRENCH.

Variable credit.
Modules 1-2-3-4-5. Staff.

French 206. SPECIAL TOPICS IN FRENCH.

Variable credit.
Modules 1-2-3-4-5. Staff.

GERMAN

German 8. BASIC GERMAN CONVERSATION.

Not offered, 1974-75.

This course is based on the film program *Guten Tag,* a series of German language-teaching films designed to teach simple conversational German. The 26 episodes, each 15 minutes in length, tell amusing stories of five foreigners in Germany. Each film is viewed two or three times and supplemented by drills in the classroom and the language laboratory. This course can be taken as an independent unit, but ideally it should be taken in conjunction with German 11.
Ms. Overvold

German 10. READING KNOWLEDGE OF GERMAN.

A course in grammar and reading that will provide the student with the ability to read scientific and scholarly literature of average difficulty. No previous knowledge of German required. Indivisible course.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Kaiser

German 11. INTRODUCTORY GERMAN.

This course is designed to impart an active command of the German language. It combines the study of grammar with oral practice and readings in literary and expository prose. Indivisible course.

Full course, Modules 1-2.	Ms. Overvold.
Full course, Modules 3-4.	Ms. Overvold.
Full course, Module 1.	Mr. Hughes.
Full course, Module 2.	Mr. Hughes.
Full course, Module 5.	Ms. Overvold.

German 12. INTERMEDIATE GERMAN.

Review of German grammar. Reading and discussion of significant works in prose, poetry and drama to acquaint students with outstanding writers and ideas in German literature and culture. Conducted in German. Individual work in the language laboratory. Weekly written assignments. Prerequisite: German 11 or equivalent background in the language.

Full course, Modules 1-2.	Ms. Overvold, Mr. Kaiser
Full course, Modules 3-4.	Ms. Overvold, Mr. Kaiser.

German 58. THE GERMAN BALLAD.

Ballads are essentially song-poems that tell a story, and there is a great wealth of interesting ones in German literature. All of them deal with man, his emotions, his attitudes, his relationship to his fellowmen and the conditions which he finds in nature or which he creates himself. Some of the basic themes are love, hate, revenge, loyalty, compassion, fear, anxiety, death. On the average, one

ballad will be studied per hour. The great variety of theme setting, mood and form will be analyzed, and suitable examples will demonstrate different methods of interpretation. The course is open to students with at least one year of college German or the equivalent. Interest in literature is essential. There will be either six or eight contact hours per week depending on the background and the wishes of the students.
Full course, Module 5. Mr. Kaiser.

German 130. MODERN GERMAN PROSE.

Selected works by Mann, Hesse, Kafka, Dürrenmatt, and Grass. Discussions, oral and written reports in German. Prerequisite: German 12.
Full course, Modules 1-2. Mr. Hughes.

German 132. ADVANCED COMPOSITION AND CONVERSATION.

Not offered, 1974-75.

Designed to develop accuracy and fluency of oral and written expression. Review of selected problems of grammar and exercises in idiomatic use of the language. Reading and analysis of modern short stories and discussion of significant aspects of contemporary German. Oral reports, weekly compositions. Required of majors. Prerequisite: German 12 or the equivalent. Admission subject to consent of instructor.
Mr. Kaiser.

German 138. MODERN GERMAN DRAMA.

Not offered, 1974-75.

Reading and interpretation of works of modern German drama, including plays of Wedeking, Kaiser, Brecht, Dürrenmatt, Frisch, and Weiss. Discussions, oral and written reports in German. Prerequisite: German 12.
Mr. Schatzberg.

German 140. THE AGE OF ENLIGHTENMENT AND THE PERIOD OF STORM AND STRESS.

Not offered, 1974-75.

A study of the major ideas and authors of the German Enlightenment with emphasis on the conflict between rationalism and irrationalism in the second half of the eighteenth century. Prerequisite: German 12.
Mr. Schatzberg.

German 142. GERMAN ROMANTICISM.

An analysis of German Romanticism from its beginning in the seventeen-nineties to its decline in the eighteen-thirties. Aesthetic credos, lyric poetry, the drama, major prose works (among them the fairy tale as an art form) will be discussed in their relation to the intellectual history of the period. Authors include the Schlegel brothers, Hölderlin, Novalis, Tieck, Wackenroder, Kleist, Brentano, E.T.A. Hoffmann, Eichendorff, and Heine. Given in German. Prerequisite: German 12.
Full course, Modules 1-2. Mr. Schatzberg.

German 145. THE GERMAN NOVELLE.

Not offered, 1974-75.

An historical and critical study of this uniquely German genre. Particular attention will be paid to narrative technique and to the typical features of the Novelle distinguishing it from the short story on the one hand and from the novel on the other. Selections range from Early Romanticism to Thomas Mann. Where applicable, a number of poems by the author under consideration will be discussed. Given in German. Prerequisite: German 12.
Mr. Kaiser.

German 154. HISTORY OF GERMAN LITERATURE.

Not offered, 1974-75.

Survey of German literature from earliest times to the present. Given in German. Prerequisite: German 132 or consent of the instructor.

German 155. "BIEDERMEIER" AND YOUNG GERMANY.

A study of post-Romantic movements in German literature and their relation to intellectual and social trends. Discussion and analysis of representative dramatic and narrative works by Grillparzer, Gotthelf, Droste-Hülshoff, Mörike, Stifter, Heine, Grabbe, and Buchner. Given in German. Prerequisite: Both semesters of German 12 or the equivalent.
Half course, Module 1. Mr. Kaiser.

German 156. REALISM.

Reading and discussion of narrative prose and poetry of German "poetic realism" which is characterized by a peculiar fusion of

objective and subjective elements. Particular attention will be paid to the writers' image of society and to aspects of narrative technique and style. Authors include Ludwig, Keller, Storm, Meyer, Raabe, Fontane. Given in German. Prerequisite: Both semesters of German 12 or the equivalent.
Half course, Module 2. Mr. Kaiser.

German 162. GOETHE'S FAUST.

Reading and discussion of Goethe's *Faust I and II.* Given in German. Prerequisite: German 12 or consent of the instructor.
Full course, Modules 3-4. Mr. Schatzberg.

German 166b. GERMAN DRAMA FROM LESSING TO EXPRESSIONISM.

Not offered, 1974-75.

Reading and discussion of representative plays by the chief German dramatists from the end of the eighteenth to the early twentieth century. The course will focus on the sociopolitical aspects of these works, on the aims and concepts of the dramatic art and the changing traditions in playwrighting. Authors include Lessing, Goethe, Schiller, Kleist, Grillparzer, Büchner, Hebbel, Hauptmann, Schnitzler, and Kaiser. Given in German. Prerequisite: German 12.

Mr. Kaiser.

German 168. THE CONFLICT BETWEEN THE INDIVIDUAL AND THE STATE.

Various aspects of this theme will be traced in representative plays by German writers such as Goethe, Schiller, Kleist, Büchner, Brecht, Frisch, Weiss, Grass, and Hochhuth.
Problems to be discussed will include man's attitude toward the established social and political order, his desire for freedom and justice, tests of his conscience and commitment, the use and abuse of power, the function of doctrines and ideologies.
The course will be given in English, all works will be read in translation.
Full course, Module 5. Mr. Kaiser.

German 170. THOMAS MANN.

A concentrated study of the short stories and of the novel Felix Krull. Mann's development is traced from his early aestheticism and cultural pessimism to his later avowal of democratic socialism and historical optimism. Discussions of Nietzsche, Schopenhauer, Wagner and Freud will illuminate Mann's changing perspective and artistic values and will take into account some reading in the historical background of the time.
Half course, Module 3. Mr. Hughes

German 172. NATURALIST AND EXPRESSIONIST DRAMA.

Drama during the last quarter of the 19th and the first quarter of the 20th centuries. Writers to be read include Hauptmann, Schnitzler, Kaiser, Wedekind, Hofmannsthal, Barlach and Brecht; themes include *decadence* and impressionism. The dramatic "movements" will be related to the social and aesthetic theories which underlie them. This half century is extremely diverse and politically unstable in Germany and Austria; some reading in the cultural and historical background will be necessary.
Half course, Module 4. Mr. Hughes.

German 190a. GOETHE.

Not offered, 1974-75.

An introduction to the life and work of Goethe, excepting his *Faust.* Prerequisite: consent of the instructor. Given in German.

German 192b. SCHILLER AND KLEIST.

Not offered, 1974-75.

A study of major literary works of Schiller (drama, poetry) and Kleist (drama, narrative prose). The works will be considered in terms of the historical epoch in which they were written. Discussion will focus on structural, moral, socio-political and existential aspects. Given in german. Prerequisite: German 12 or the equivalent.

Dr. Kaiser.

German 196. INDEPENDENT READING AND RESEARCH IN GERMAN LITERATURE.

Independent course of study limited to qualified juniors and seniors. Reading and research will be in German or English and the program arranged individually. Prerequisite: consent of the instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

German 198. SEMINAR.

Not offered, 1974-75.

Principally for advanced students of literature, this course aims at an interdisciplinary approach. Topic varies.

Staff.

German 106. SPECIAL TOPICS IN GERMAN.

Variable credit.
Modules 1-2-3-4-5. Staff.

German 206. SPECIAL TOPICS IN GERMAN.

Variable credit.
Modules 1-2-3-4-5. Staff.

HEBREW

Yiddish 10. INTRODUCTORY YIDDISH.

This course is intended to provide the student with an opportunity to gain a basic familiarity with the Yiddish language. There will be ample exposure to grammar, reading, and speaking. These skills will be acquired by work in the textbook along with classroom expression and discussion. With the acquisition of vocabulary, students will be expected to employ it in both speaking and writing.
Half course, Modules 1-2. Rabbi Gordon.

Hebrew 11. ELEMENTARY SPOKEN HEBREW.

Emphasis on the spoken, living Hebrew language. Acquisition of vocabulary and basic grammar through reading of simple texts. Part of course, audio-visual method of "Habet U Shma." Three class meetings a week plus one hour of drill and one hour of individual work in the language laboratory. Indivisible course.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Raviv.

Hebrew 12. INTERMEDIATE MODERN HEBREW.

Reading of graded texts: Selected works from modern Hebrew literature, newspapers, etc. Enrichment and reinforcement of grammatical structures and written expression. Three class meetings a week plus one hour of drill and one hour of individual work in the language laboratory. Prerequisite: The equivalent of Hebrew 11.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Raviv.

Hebrew 15. CONVERSATIONAL HEBREW FOR INTERMEDIATES.

The aim of this course, using the "Ulpan" method, will be fluency in oral communication. Prerequisite: the knowledge of some basic Hebrew vocabulary and structure.
Full course, Module 5. Ms. Raviv.

Hebrew 130. ADVANCED HEBREW.

A language-literature course based on readings of simple texts in contemporary Hebrew prose, drama, poetry. Advanced grammar and composition, with emphasis on the spoken language. Prerequisite: Intermediate Hebrew or the equivalent.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Raviv.

RUSSIAN

Clark students may take additional courses in Russian language and literature at the College of the Holy Cross and Assumption College through the Consortium.

Russian 11. INTRODUCTORY RUSSIAN.

An introduction to the written and spoken language. Four class periods and three laboratory sessions per week. Indivisible course.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Kriskijans.

Russian 12. INTERMEDIATE RUSSIAN.

Advanced Russian grammar. Continued emphasis upon reading and conversation. Three class periods, one supervised drill session, and three laboratory sessions per week. Open to qualified freshmen.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Kriskijans.

Russian 106. DIRECTED READING.

Students interested in specific authors and/or topics in Russian literature and civilization may receive instruction and guidance in either English or Russian.
Variable credit.
Modules 1-2-3-4-5. Ms. Kriskijans.

SPANISH

Spanish 11. ELEMENTARY.

For beginners or others not yet qualified to enter the intermediate course. Grounding in all four language skills (hearing, speaking, reading, writing) as preparation for subsequent courses conducted in the language. Four class meetings a week plus three half-hour periods of individual work in the language laboratory. Indivisible course.
Full course, Modules 1-2. Mr. Reid, Ms. D'Lugo.
Full course, Modules 3-4. Mr. Reid, Ms. D'Lugo.
One-and-one-half course, Module 5. Mr. Barbera.

Spanish 12. INTERMEDIATE.

This course is designed to improve one's reading skill. Conducted in Spanish. Three class meetings a week plus three half-hour periods of individual work in the laboratory. Prerequisite: Spanish 11 or equivalent skill in the language, to be determined by a placement test. Students will normally proceed into Spanish 131 at the end of the first semester of Spanish 12.
Full course, Modules 1-2. Mr. D'Lugo.
Full course, Modules 3-4. Mr. Barbera.

Spanish 117. SPEAKING SPANISH: BEGINNING LEVEL.

An intensive conversation course designed for students who have completed Spanish 11 or the equivalent. The course objective is to liberate the student from having to pause over verb conjugations, special phrasings, etc. and to help him gain a relaxed attitude toward a new language. The student will become more self-confident as he realizes the extent to which he can express himself.

Course activities will be varied, ranging from spontaneous conversation based on topics of current interest to dramatizations of dialogs or skits. Tentative reading list: *Vivir hoy; Sol y Sombra.*
Full course (intensive), Module 5. Ms. D'Lugo.

Spanish 127. PRACTICE IN ORAL AND WRITTEN SPANISH.

An advanced intermediate course to help student develop fluency and accuracy in the spoken and written language. Classes will stress composition and pronunciation, as well as conversation practice. Intended primarily for freshmen who have completed 2-3 years of high school Spanish.
Full course, Modules 1-2. Mr. Barbera

Spanish 131. READINGS IN MODERN SPANISH AMERICAN LITERATURE.

Third-year level. Close examination of principal writers in the development of 20th Century Spanish-American prose. Special emphasis on the bestiary motif: Quiroga, Borges, Cortazar, and Arreola and their utilization of metamorphosis between man and animal. Conducted in Spanish. Prerequisite: Spanish 12 or equivalent skill in the language.
Half course, Module 1.
Half course, Module 2. Mr. D'Lugo.

Spanish 131.1. READINGS IN MODERN SPANISH AMERICAN LITERATURE: THEATER.

Third-year level. Examination and discussion of basic trends in Spanish American theater in the 20th century. Emphasis on the social and artistic directions on theater in Mexico, Central America and Argentina. Conducted in Spanish. Prerequisite: Spanish 12 or equivalent skill in the language.
Half course, Module 1. Mr. D'Lugo.

Spanish 131.2. READINGS IN MODERN SPANISH AMERICAN LITERATURE: POETRY.

Third-year level. Reading and discussion of principal poets in Spanish America from Ruben Dario to the present. Examination of the opposing tendencies of regionalist poetry and the experimental poetry (Huidobro), *poesia comprometida* (El canto general). Consideration of the problems of poetic language and the effort by various poets to express personal and social themes in their poetry. Particular consideration of the poetry of Neruda, Octavio Paz and Cesar Vallejo. Conducted in Spanish. Prerequisite: Spanish 12 or equivalent skill in the language.
Half course, Module 2. Mr. D'Lugo

Spanish 132. INTRODUCTION TO SPANISH LITERATURE OF THE 20TH CENTURY

Not offered 1974-75.

Reading and discussion of selected works from the Generation of 1898 to the contemporary period (Unamuno, Pío Baroja, García Lorca, Cela, Buero Vallejo, Sastre). Emphasis on conflictual structures within dramatic and narrative works: individual vs. the group as seen particularly in the Civil War and its effects on subsequent literary and social developments in Spain.
Half course, Module 3.
Half course, Module 4. Mr. D'Lugo.

Spanish 132.3. INTRODUCTION TO SPANISH LITERATURE OF THE 20TH CENTURY: FROM THE WAR OF 1898 TO THE CIVIL WAR.

Examination of narrative and dramatic works in an effort to understand the nature of political and personal reality in Spain from the loss of her last colonies till the outbreak of the Civil War. Emphasis on the conflictual structures of family and society as seen in works by Unamuno, Benavente, Pío Baroja and García Lorca. Prerequisite: Spanish 131 or permission of the instructor.
Half course, Module 3. Mr. D'Lugo.

Spanish 132.4. POST-CIVIL WAR LITERATURE IN SPAIN: 1942—THE PRESENT.

Consideration of the novel and theater in the last three decades as reflections of artistic as well as social directions in Spanish literature. Dramatic works by Alfonso Sastre and Antonio Buero Vallejo, novels by Camilo José Cela and Juan Goytisolo. Prerequisite: Spanish 132.1 or equivalent.
Half course, Module 4. Mr. D'Lugo.

Spanish 134. ASPECTS OF MEXICO.

This course aims to communicate something of the rich and unique cultural heritage of Mexico as seen through its history from pre-Columbian times down to the present, and especially as portrayed by creative writers since the cataclysmic events of the Revolution of 1910. According to the inclinations of the students, attention may also be given to such factors as the indigenous cultures, archeology, folklore, politics and art, and the profound effects of Mexico's extraordinary diverse geography on the life of the people. Conducted in Spanish. Prerequisite: at least the first semester of Spanish 131, or the equivalent.
Full course, Modules 3-4. Mr. Reid.

Spanish 134.1. MEXICAN THEMES.

Independent study of literature dealing with some theme of Mexican culture, chosen by the student. Written report. Limited to students currently enrolled in, or who have previously completed, Spanish 134, or have had some comparable introduction to Mexico.
Variable credit. Mr. Reid.

Spanish 135. HISPANIC ETHOS AND CINEMA: THE FILMS OF LUIS BUÑUEL.

Not offered, 1974-75.

Viewing, discussion and analysis of the major films of Luis Buñuel in the context of the cinematic medium as well as in the broader tradition of a particular critique of Hispanic social values. The recurrent motifs of catholicism and the church, charity, violence and sexual repression will be examined as cinematic form and substance. Readings will include film scripts, film criticism, and source novels. Conducted in Spanish. Prerequisite: Spanish 12 or equivalent skill in the language. Attendance at 10 film showings during the semester (approximately one weekly) will be required of students taking the course for credit. All films will be subtitled in English.

Mr. D'Lugo.

Spanish 136. WOMEN'S ROLE IN SPANISH LITERATURE.

Not offered, 1974-75.

Selected works will be studied with a focus on the rôle of women in the literature of Spain throughout the centuries. Prerequisite: Spanish 12 or an equivalent skill.

Mr. Barbera.

Spanish 137. ORAL AND WRITTEN SPANISH.

Third-year level. A rapid, intensive review of grammar; the elements of phonetics, exercises in composition and pronunciation; conversational practice. Conducted in Spanish. Two regular class periods, one two-hour session, and one to two hours in the laboratory per week. Prerequisite: Grade of B- or higher in Spanish

12 or equivalent skill in the language, to be determined by a placement test. Admission subject to consent of instructor. Offered in alternate years, spring semester.
Full course, Modules 3-4. Mr. D'Lugo.

Spanish 139. LITERATURE AND REVOLUTION IN SPANISH AMERICA.

Examination of key political developments of the 19th and 20th centuries in Spanish America, as well as their relation to the literature of Latin America. Readings and discussions will focus on Mexico, Argentina and Cuba, with special emphasis on the historical and literary roots of the recent Cuban experience, as well as the significance of the Castro revolution for the rest of the hemisphere. Readings and discussions in Spanish. Prerequisite: Spanish 131 or permission of instructor.
Full course, Modules 1-2. Mr. D'Lugo.

Spanish 205.1. PROSEMINAR: THE CITY AS POLITICAL AND CULTURAL REALITY IN SPANISH AMERICA.

An interdisciplinary approach to the development of urban culture in historical, political, social and cultural contexts. Readings and discussions on the history and culture of Mexico City, Havana, San Juan, and Buenos Aires, from pre-independence to contemporary era.
Half course, Module 1. Mr. D'Lugo.

Spanish 205.2 PROSEMINAR: THE CITY AS POLITICAL AND CULTURAL REALITY IN SPANISH AMERICA.

Independent study.

Students electing to take this course for one module must elect a pass/nr option. Course requirements will include two short papers. Those choosing to take both modules (one unit credit) will have one required paper, of short length for the first module. Second module work will involve an independent study project related to the general topic of the City as political and cultural reality. Normal grade option opened for students taking both modules. Prerequisite: Completion of at least one course *above* the level of Spanish 131.
Half course, Module 2. Mr. D'Lugo.

Spanish 242. EARLY SPANISH LITERATURE FROM THE POEMA DE MIO CID TO THE CELESTINA.

This course will emphasize the nature of epic poetry, the first manifestation of "realism" in the literature of the Middle Ages, and will culminate in the hybrid masterpiece, the *Celestina*, a combination of novel and drama, unique in the history of European literature. Conducted in Spanish. Prerequisite: Grade of B- or higher in a third-year course. Offered in alternate years.
Full course, Modules 1-2. Mr. Barbera.

Spanish 243. CERVANTES.

Not offered, 1974-75.

This course will concentrate upon *Don Quijote*. The picaresque novel will be read for its influence upon Cervantes. The views of important essayists will be studied in conjunction with the reading of the Quijote. Conducted in Spanish. Prerequisites: Grade of B- or higher in a third-year course.
Mr. Barbera.

Spanish 244. THE DRAMA OF THE SIGLO DE ORO.

Besides studying the major figures such as Lope de Vega, Tirso de Molina, Alarcón, and Calderón de la Barca, there will be some study of the origins of the drama in Spain. Conducted in Spanish. Prerequisite: Grade of B- or higher in a third-year course.
Full course, Modules 3-4. Mr. Barbera.

Spanish 245. THE MODERN SPANISH NOVEL.

Not offered, 1974-75.

A number of 19th-century novels will be read. The 20th century will be represented by such outstanding novelists as Galdós (who bridges the 19th and 20th centuries), Unamuno, Valle-Inclán, Baroja, and Delibes. Conducted in Spanish. Prerequisite: Grade of B- or higher in a third-year course. Offered alternate years.
Mr. Barbera.

Spanish 246. MAIN CURRENTS OF CONTEMPORARY SPANISH AMERICAN FICTION.

Not offered, 1974-75.

Examination of the works of two major writers, Jorge Luis Borges (Argentina) and Gabriel García Márquez (Colombia) as examples

of the changing nature of narrative experimentation in Spanish-American fiction over the last four decades. The course will stress the individual contributions of each author to the theme of narrative experiments while attempting to relate these aspects of fiction to established literary and social traditions in Spanish America. Argentine readings will stress Borges' theory of self-conscious fiction and his extreme experiments in the development of what has come to be called the "Borgian narrative." Readings from the works of García Márquez will stress the Macondo cycle, works related to the foundation and life in the mythical town which is the setting for García Márquez' major works. Special emphasis will be given to *Cien años de soledad,* García Márquez' masterpiece, considered by some critics to be the finest novel written in the Spanish language since the *Quijote.*
Mr. D'Lugo

Spanish 248. SPANISH PHONOLOGY.

An analysis of the pronunciation system of the Spanish language. Prosodic features, intonation, segmental phonemes in the stream of speech; some attention to major dialectal differences. Prerequisite: Advanced Spanish; Linguistics 114 (General Phonetics and Phonemics) or a suitable substitute. Any student wishing to offer a substitute for Linguistics 114 should consult the instructor in advance if possible. Conducted principally in Spanish. Given in alternate years.
Half course, Module 2. Mr. Reid.

Spanish 106. SPECIAL TOPICS IN SPANISH.

Variable credit.
Modules 1-2-3-4-5. Staff.

Spanish 206. SPECIAL TOPICS IN SPANISH.

Variable credit.
Modules 1-2-3-4-5. Staff.

FOREIGN AND COMPARATIVE LITERATURE COURSES TAUGHT IN ENGLISH

CLASSICS

Classics 124. GREEK MYTHOLOGY AND RELIGION.

A study of mythology and religion and its place in the psyche and society of the ancient Greeks. Emphasis will be placed on the psychological and cultural origins of myth, the search for immortality through orgiastic and hero cults, the influence of myth on art, literature and later cultures.
Full course, Modules 1-2. Ms. Toepel.

Classics 130. THE ART AND ARCHEOLOGY OF GREECE AND ROME.

Not offered, 1974-75.

A study of the evolution of Greek and Roman artistic forms and the methods of interpreting archeological evidence. Included in this study will be a section on urban design in the ancient world.
Full course, Modules 3-4. Ms. Toepel.

Classics 135. GREEK DRAMA: TRAGEDY AND COMEDY.

Analyses of selected tragedies and comedies of Aeschylus, Sophocles, Euripides and Artistophanes with an emphasis on the nature, purpose and origins of tragedy and comedy; the religious and moral problems posed; play production in the ancient theater.
Full course, Module 3-4. Ms. Toepel.

Classics 140. GREEK AND ROMAN EPIC AND ROMANCE.

True nature and evolution of the epic from the oral improvisation of Homer to the elaborate composition of Vergil and of the Greek and Roman prose narratives, the "proto-novels," such as the *Satyricon,* the *Golden Ass* and the *Romance of Daphnis and Chloe.* .
Ms. Toepel.

Classics 150. THE IDEA OF HISTORY IN THE ANCIENT WORLD.

Not offered, 1974-75.

A study of the literary sources for the ancient civilizations of Egypt, the Middle East, Greece and Rome covering the types of literary sources available for each period and place, the aims and methods of the major historians such as Herodotus and Livy, comparison of authors dealing with the same events, and the nature of the supplementary material.
Ms. Toepel.

COMPARATIVE LITERATURE

Comparative Literature 116. COLLOQUIUM ON MODERN GERMAN LITERATURE.

The purpose of this course is to examine some of the dominant themes in modern German literature and to acquire skill in interpreting literary works. Enrollment is limited to assure every student the opportunity for active participation. Subject for fall, 1974: Selected prose works of Rilke, Mann, Hesse, Kafka, Grass.

Full course, Modules 1-2. Mr. Schatzberg.

Comparative Literature 118. LITERATURE AND THE NATURE OF MAN.

Ideas held by outstanding literary artists of the Western World concerning the nature of man and his relation to the universe. The works are also to be studied as representative of the cultures of which they are products. The subject matter discussed includes Sophocles' *Oedipus the King, The Book of Job,* Dante's *Divine Comedy,* Shakespeare's *King Lear,* Milton's *Paradise Lost,* Molière's *Misanthrope,* Goëthe's *Faust,* and selected poems of T.S. Eliot. All non-English works are read in translation. Admission subject to the consent of the instructor.

Full course, Modules 1-2.
Full course, Modules 3-4. Mr. King and Mr. Anderson.

Comparative Literature 131. STUDIES IN THE ENLIGHTENMENT.

This course will look into 18th century thought as it influenced the lives of men in England, France, Germany, Italy and the United States. The Enlightenment can be studied from a political and historical point of view. In this course, however, we will examine this age from the point of view of ideas, philosophies and cultures as found in selected works of Locke, Voltaire, Montesquieu, Rousseau, Beccaria, Lessing, Gibbon, Hume, Franklin. Lectures and discussions.

Full course, Modules 3-4. Fr. Desautels.

Comparative Literature 150. GREEK MYTHS AND THEMES IN WESTERN LITERATURE.

Not offered, 1974-75.

Graeco-Roman myths and themes have provided a basis for many works of western literature. This course will cover various authors in several time periods who have used the myths of Pandora, Ulysses; the themes of return to nature, the rebellious god, the poet as guide, the vision of hell, and others.

Ms. Toepel.

Comparative Literature 155. SHORT FICTION FROM BOCCACCIO TO BRECHT.

A generic and historical study of the shorter forms of narrative prose such as short story and novella. Readings vary with the availability of texts, but will most likely include Boccaccio, Maupassant, Thomas Mann, Brecht, Chekhov, Poe, Steinbeck, Dylan Thomas and Richard Brautigan. The changing social and aesthetic function of the forms will be related to other types of literature and to the rise of the novel as the dominant narrative art Some theoretical and critical writings will be included in the syllabus.

Full course, Module 3. Mr. Hughes.

Comparative Literature 168. MUSIC IN GERMAN LITERATURE AND THOUGHT.

Countless musicians, philosophers, and writers have speculated on the nature of music, its mysterious power to influence people and to communicate strong feelings. This course will be devoted to reading and discussion of works by the following authors from the German speaking countries of the nineteenth and twentieth centuries: Wackenroder, Kleist, Schopenhauer, E.T.A. Hoffmann, Goethe, Grillparzer, Heine, Morike, Wagner, Nietzsche, Hesse, and Thomas Mann. The approach will be predominantly thematic; however, several works will be studied which reveal the author's successful attempts to employ musical devices and structures in his literary creations.

Full course, Modules 3-4. Mr. Kaiser.

Comparative Literature 175. EUROPEAN ROMANTICISM.

Not offered, 1974-75.

A study of the origins and development of the Romantic imagination in France and Germany. Questions about the unity of Romanticism and about the relation of romantic to modern literature will be raised.

Mr. Horn, Mr. Kaiser and Mr. Schatzberg.

Comparative Literature 180. IRRATIONAL CURRENTS IN CONTEMPORARY THEATRE.

Not offered, 1974-75.

A study of the preoccupation in modern theatre with "primitive" forms of dramatic expression such as ritual, myth, magic, non-verbal communication, theatre as a form of popular psychotherapy.

Mr. Spingler.

Comparative Literature 185. WOMEN IN LITERATURE: ON OR OFF THE PEDESTAL?

A broad examination of women in nineteenth-century fiction and drama. Authors studied include: Austen, Ibsen, Flaubert, Tolstoy, Hawthorne, Hardy, Schiller, Zola, and James.

One-and-one-half course, Module 5. Mr. Horn.

Comparative Literature 190. CRITICAL APPROACHES TO LITERATURE.

This course introduces students to a wide variety of critical approaches which have been taken toward literature. Although some Neo-Classical and Romantic criticism is discussed, the emphasis is on those postures characteristic of the twentieth century and which the student is most likely to encounter and to find fruitful for the development of his own critical responses: the psychological approaches of Freud and Jung, the historical and Marxist methodologies, existentialist interpretations, the "intrinsic" approach of the New Criticism, the perspectives of literary sociology, and others.

Full course, Modules 1-2. Mr. Hughes.

Comparative Literature 192. KAFKA SEMINAR.

A careful study of Kafka's short stories, parables, and aphorisms. Prerequisite: good familiarity with the major short stories and novels of Kafka. Given in English.

Full course, Module 3. Mr. Schatzberg.

Comparative Literature 193. HESSE SEMINAR.

A study of the major formative influences on Hesse's writings. Selected readings from Nietzsche, Freud, and Jung. Prerequisite: good familiarity with the major novels of Hesse. Given in English.

Full course, Module 4. Mr. Schatzberg.

Comparative Literature 195. THE BIBLE AS LITERATURE.

Not offered, 1974-75.

This course deals with the Bible as a literary masterpiece, not as a theological work. The course purpose is two-fold: to introduce students to the variety of forms, legends, myths, and heroes in the Bible; and to acquaint them with Biblical analogues and references in European literature. Readings will be taken from the Old and New Testaments, the Apocrypha, and the Dead Sea Scrolls.

Mr. Horn.

Comparative Literature 205. EXPERIMENTS IN MODERN NARRATIVE FORM.

Not offered 1974-75.

This course investigates the modifications of the traditional novel form which have maintained the novel's position as the major literary genre of the twentieth century. Representative works of the following authors will be studied: Joyce, Virginia Woolf, John Fowles, Proust, Beckett, Michel Butor, Thomas Mann, Hermann Broch.

Mr. Hughes.

Comparative Literature 210. THE LITERARY HERO.

Not offered, 1974-75.

As early as 1499, in European literature, a harlot becomes the heroine of a major work. The intrusion of characters of less than heroic stature is an innovation that merits some study. Beginning with the *Celestina,* and followed by a number of works including *Lazarillo de Tormes* and *Moll Flanders,* an attempt will be made to trace the increasing importance of characters of "piccola nazione" in the literary work. Heroic qualities yield to their opposite. The questions and problems that arise as a result of such a displacement will be the subject of analysis and commentary.

Mr. Barbera.

Comparative Literature 230.1. PROBLEMS IN DRAMA: FARCE.

The class will explore certain problems peculiar to Drama from the point of view of the relationships between the written text and performance. The distinctive nature of farce will be studied,

especially the styles and modes appropriate to the *genre*. The problem of the irrational roots of farce will be a major concern of the course. There will be considerable scene work done in class.
Half course, Module 3.
Half course, Module 4. Mr. Spingler.

Comparative Literature 230.2. PROBLEMS IN DRAMA: COMEDY.

An exploration of the nature of comedy in terms of structure and myth. As in the study of Farce, attention will be paid to performance, styles, and modes. Participation in the module on Farce is recommended but not required.
Half course, Module 4. Mr. Spingler.

Comparative Literature 240. ELEMENTS OF NARRATIVE.

An introduction to the traditions and techniques associated with the development of western narrative literature. The course will explore two central areas of critical concern: the conventions of the narrative art (genre distinction, problems of verisimilitude, peripatetic and picaresque forms); techniques and the analysis of narrative models (rhetorical and linguistic devices, formal and structural approaches to the narrative text, non-literary disciplines — psychology, history, anthropology—and the understanding of narrative models).
Full course, Modules 3-4. Mr. D'Lugo.

Comparative Literature 251. FUNDAMENTALS OF LITERATURE.

This core course is required of candidates in the B.A./M.A. Comparative Literature Program and is open to majors in Comparative Literature with permission of the instructor. The course will attempt to answer some fundamental questions concerning the nature, meaning and significance of literature. Literature as a body of material defies exact definitions or rules. The course will necessarily be tentative and exploratory and problems arising from disputed views through the centuries will be considered. A limited number of works will be studied as problematical texts. Indivisible.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Barbera.

Comparative Literature 256. COLLOQUIUM ON PROBLEMS.

An ongoing colloquium designed to consider the formulation and resolution of problems in comparative literature. (Prerequisite Open to and required of students accepted into the Comparative Literature Program).
Staff

FRENCH

French 130. MODERN FRENCH NOVEL.

Readings and discussions of outstanding works of contemporary French fiction, including novels by Gide, Malraux, Sartre, and Camus.
Full course, Modules 1-2. Mr. Horn.

French 130. THE THEATER OF REVOLT.

Not offered, 1974-75.

A study of plays representative of surrealist, symbolist, existentialist and absurdist theater, and discussion of Artaud's theory of the Theater of Cruelty. Among the playwrights to be read: Jarry, Cocteau, Vitrac, Camus, Beckett, Vian, Sartre, Ionesco, Cesaire, and Genet.
Mr. Spingler.

French 150. ROUSSEAU AND HIS DISCIPLES.

An extensive study of Rousseau and his disciples: the "naive" Bernardin de Saint-Pierre and Chateaubriand and the "cynical" Choderlos de Laclos and Marquis de Sade. Conducted in English.
Full course, Modules 3-4. Mr. Horn.

HEBREW

Hebrew 119. HEBREW SCRIPTURES—PENTATEUCHAL AND HISTORICAL BOOKS.

A survey and critical analysis of Genesis, Exodus, Leviticus, Numbers, Deuteronomy, Joshua, Judges, Samuel, and Kings.
Full course, Modules 1-2. Rabbi Klein.

Hebrew 120. HEBREW SCRIPTURES—PROPHETIC AND WISDOM LITERATURE.

Not offered, 1974-75.

An analysis of relevant texts in Amos, Hosea, Micah, Isaiah, Jeremiah, Ezekiel in terms of their historical, social and religious background and their role in shaping the thinking of the Biblical Age.

Full course, Modules 1-2. Rabbi Klein.

Hebrew 121. THE WISDOM LITERATURE OF THE BIBLE.

Problems of life and faith in the biblical books, Psalms and Proverbs, compared to the wisdom literature of the ancient near eastern cultures of the time.

Half course, Module 3. Mr. Kushner.

Hebrew 122. WHEN GOOD PEOPLE SUFFER.

A study of the biblical book of Job compared to Camus' *The Plague*, Wilder's *Bridge of San Luis Rey* and Macleish's *J.B.*

Half course, Module 4. Mr. Kushner.

Hebrew 140. JEWISH MYSTICISM.

Major Ideas of Jewish Mysticism from Rabbinic times to the emergence of the Hassidic movement. This course will examine the growth of Kabbalism—Jewish Mysticism as a religious movement. Various kabbalistic ideas such as the theory of the Hidden God and His attributes, will be examined in depth. The role of Mysticism in the development of Jewish thought will be evaluated.

Half course, Module 2. Mr. Kauffman.

Hebrew 165. MODERN HEBREW LITERATURE.

Not offered, 1974-75.

A survey of the renascence of Hebrew language and literature from the 1880's to the establishment of the State of Israel in 1948. Major currents and modes will be noted with readings of Hebrew writers in the area of fiction, essay, poetry and drama. Among the writers to be read and discussed: Mendele, Ahad Ha-am, Beridichevsky, Frishman, Peretz, Bialik, Tchernihovsky, Schneour, Kahan, Greenberg, Brenner, Berkowitz, Gnessih, Shoham.

Hebrew 170. THE LITERATURE OF AMERICA'S JEWS: 1912 TO THE PRESENT.

From the immigrant experience to contemporary problems of identity America's Jews have grappled with Jewish problems through literature. Representative work will be closely examined for an historical and cultural analysis of the community's and the individual's reactions to problems of adjustment, integration, heritage and identity. Authors from whom selections will be chosen include: Mary Antin, Abraham Cahan, Meyer Levin, Henry Roth, Michael Gold, Ludwig Lewisohn. Sholom Asch, Charles Angoff, Phillip Roth, Bernard Malamud, Saul Bellow and Chaim Potok. Enrollment will be limited to ensure active participation of all students in a seminar format.

Full course, Modules 3-4. Ms. Albert.

Hebrew 175. THE LITERATURE OF MODERN ISRAEL.

The major problems facing the "old and new" generation of Israeli novelists, short story writers, poets and dramatists will be explored. Among the writers included will be Agnon, Hazaz, Burla, Shenberg, Yizhar, Schlonsky, Altermann, Goldberg, Karni, Shamir. Meged, Amihai, Yehoshua, Oz.

Full course, Modules 1-2. Mr. Raviv.

Hebrew 185. TRENDS AND VALUES IN YIDDISH LITERATURE

Not offered, 1974-75.

An outline of the major lines of development from the folk literature of the sixteenth century to the contemporary short story, novel, essay and poem. Yiddish literature will be viewed both as an aspect of world literature and as a major factor in the preservation and enhancement of the specific distinguishing characteristics of the Jewish experience.

Theatre Art. 184. THE GOLDEN AGE OF THE YIDDISH THEATRE.

Refer to description under Theatre Art.

RUSSIAN

Russian 130. RUSSIAN SHORT STORY.

A study of the short story genre in Russian literature. Readings will include the works of Pushkin, Gogol, Chekhov, Gorky, Andreyev, Bunin, Solzhenitsyn and others. Given in English.
Full course, Modules 3-4. Ms. Kriskijans.

Russian 140. THE GOLDEN AGE OF RUSSIAN THEATER.

A study of major Russian plays and their production on the Russian stage. Institutions and personalities such as the Moscow Arts Theater, the Kamerny Theater, Stanislavsky, Danchenko, Meyerhold, Tairov and Vakhtangov will be discussed. The course will focus on realism and theatricalism as styles of production and their impact on the contemporary theater outside Russia. Among the plays analyzed will be Gogol's *Inspector General,* Gorky's *Lower Depths,* Mayakovsky's *Bedbug* and the major plays of Chekhov.
Full course, Module 5. Ms. Kriskijans, Mr. Raviv (Theater Arts).

Russian 165. INTRODUCTION TO SOVIET LITERATURE.

This course will study the tradition of Russian literature in the first decades of the 20th century, the impact of the Russian Revolution and the doctrine of socialist realism on the literature, and the contemporary trends. To include works by Biely, Sologub, Gorky, Gladkov, Zamyatin, Olesha, Sholokhov. Zoshchenko, Pasternak and Solzhenitsyn. Given in English.
Full course, Modules 1-2. Ms. Kriskijans.

Russian 170. DOSTOEVSKY.

Not offered, 1974-75.

This course will focus on various aspects of Dostoevsky's art and thought, through lectures and class discussion. Readings include shorter works, such as "Notes from the Underground," and the major novels, *Crime and Punishment, The Idiot, The Possessed* and *The Brothers Karamazov.* Given in English.
Ms. Kriskijans.

Russian 175. MODERN RUSSIAN PROSE.

Not offered, 1974-75.

A selection of outstanding Russian prose works of the 19th and 20th centuries. Readings include stories of Pushkin, Gogol, Chekhov, Babel and Olesha, as well as novels by Biely, Pasternak, and Solzhenitsyn. Given in English.

Russian 180. THE 19TH CENTURY RUSSIAN NOVEL.

Not offered, 1974-75.

A study of the development and evolution of the novel during the Golden Age of Russian literature. The course will include representative works of Lermontov. Gogol, Aksakov, Goncharov, Turgenev, Dostoevsky, Tolstoy, and Saltykov-Shchedrin.
Ms. Kriskijans.

SPANISH

Spanish 130. CERVANTES.

Not offered, 1974-75.

This course will concentrate upon *Don Quixote* with excursions into other writings of Cervantes illustrating the changes in his literary development. Cervantes' debt to previous literary works will be studied. Extensive reading of critical material pertinent to the Quixote will be required. The course will be conducted in English. For students without a command of Spanish, readings will be available in English.
Dr. Barbera.

LINGUISTICS

Linguistics 114. GENERAL PHONETICS AND PHONEMICS.

Refer to description under catalog section on Linguistics.
Mr. Reid.

Linguistics 115. MAN AND LANGUAGE.

Refer to description under catalog section on Linguistics.
Mr. Reid.

260. LINGUISTICS AND LANGUAGE LEARNING.

Refer to description under catalog section on Linguistics.
(Also designated Education 260.) Mr. Reid.

ROMANCE LANGUAGES

Romance Languages 258. HISTORY OF THE ROMANCE LANGUAGES.

Not offered, 1974-75.

The development from Latin to French and Spanish, with incidental attention to other Romance Languages.
Presupposing no knowledge of Latin, the course will begin with a structural survey of the Latin grammatical system. The principle focus will be on the development from a synthetic structure to the relatively analytic structure of its modern forms, and also on the dynamic interrelations of the phonological, morphological and syntactic systems in this development. Thus primary attention is on internal linguistic history, but with necessary attention to the external history as it may have affected linguistic development. Prerequisites: elementary knowledge of both French and Spanish; and Linguistics 114 (General Phonetics and Phonemics) or a suitable substitute. Any student wishing to offer a substitute for Linguistics 114 should consult the instructor as far in advance as possible. Given in alternate years.
Full course. Mr. Reid.

GEOGRAPHY

DEPARTMENT FACULTY

Saul B. Cohen, Ph.D., Professor of Geography, Director of the Graduate School of Geography; Adjunct Professor of Government & International Relations
Leonard Berry, Ph.D., Professor of Geography; Director, International Development Program
Gerald J. Karaska, Ph.D., Professor of Geography; Editor of Economic Geography
Robert W. Kates, Ph.D., Professor of Geography* & University Professor
Duane S. Knos, Ph.D., Professor of Geography
Martyn J. Bowden, Ph.D., Associate Professor of Geography
William A. Koelsch, Ph.D., Associate Professor of History and Geography & University Archivist
Laurence A. Lewis, Ph.D., Associate Professor of Geography
Roger E. Kasperson, Ph.D., Associate Professor of Geography and Government*
Anne Buttimer, Sr. Mary Annette P.O., Ph.D., Associate Professor of Geography
Kang-tsung (Karl) Chang, Ph.D., Assistant Professor of Geography
J. Richard Peet, Ph.D., Associate Professor of Geography
Richard A. Howard, Ph.D., Assistant Professor of Geography and Biology
Douglas L. Johnson, Ph.D., Assistant Professor of Geography
Stephen L. Feldman, M.A., Assistant Professor of Geography
Harry E. Schwarz, BCE, Visiting Professor of Environmental Affairs and Adjunct in Geography
*on leave Modules 3-4.

STAFF

Mary A. O'Malley, Administrative Assistant
Polly Carew, Map Curator
Ruth A. Rowles, Senior Cartographer & Manager Cartographic Laboratory

PROFESSORS EMERITI

Raymond E. Murphy, Ph.D., Professor of Economic Geography, Emeritus
Samuel Van Valkenburg, Ph.D., Professor of Geography, Emeritus
Henry J. Warman, Ph.D., Professor of Geography, Emeritus

Each year the School of Geography has in residence or as off-campus affiliates a number of Research Affiliates. For 1974-75, these are: Asher Schick, David Sharon, Gerhard Tschannerl, Ian Burton and Dr. Ewa Novosielska. Dr. Dolores Garcia of the Universidad Autonoma in Spain will be a visitor in residence in Geography.

When the Graduate School of Geography was organized in 1921, Clark became the second university in the United States to establish a separate graduate program in geography. At the present time, advanced training is provided leading to the Master's and Doctor's degrees. In addition, the school offers an undergraduate major, and a 7- and 5-year program. A.B.-Ph.D. and B.A.-M.A. degrees. Clark is a center for geographical training and research in the United States, and its various offerings provide a maximum of individual attention through student-teacher dialogue.

UNDERGRADUATE PROGRAM

Majors in geography are required to take the following: (1) Survey of Geography (11a) plus two introductory courses from the following: Physical Geography (14a), Economic Geography (15a), Cultural Geography (17b), Maps and Mapping (19b). Substitution of 100-level courses in these four areas may be approved by the department. (2) Skill courses (two of the following): Introduction to Statistical Geography (110a), Computer Programming (212b), Second college year level foreign language, or Cartography (any two of the one-hundred level cartography courses). (3) A minimum of four elective semester courses in geography. (4) A minimum of five semester courses in a related field. A list of related courses is available in the Geography Office.

For those taking a dual or interdisciplinary major, Geography 11a is required and two of the four "skills" courses as well as a minimum of three other geography courses.

The School of Geography will initiate its extended major in September 1974. The program will cover a 3-year period (Sophomore-Senior) and will include: 1) An Introductory Tutorial for all geography majors in the Sophomore year—this will be a 7-week course to include discussion with the faculty leader of the nature of the field, writing short papers, learning what a library and other information resources are for, and exploring one topical theme which will be arrived at through student-faculty interaction; 2) A Capstone Seminar for all geography seniors—this will be a semester course offered over two modules. It will be problem-oriented and will result in an individual or team research product. The extended major experience will integrate the student's course program more fully and will provide greater scope and latitude for research/training opportunities.

THE GRADUATE SCHOOL OF GEOGRAPHY

Admission: Applicants without prior training in Geography are welcome, but depending on their concentrations, may be required to improve their knowledge of Elements of Geography, Economic Geography, Cartography, or Descriptive Statistics. Courses taken to remedy any deficiencies will not count as part of the regular program. The Graduate Record Examination scores (Verbal and Quantitative) are required of all students with the exception of those in foreign countries. The GRE Advanced Placement Test in Geography is desirable, but not required.

Degree Objectives: The graduate program in Geography at Clark has been derived from a synthesis of faculty-student discussions, documents and experiences. The Ph.D. training program stands as the central thrust in the Graduate School of Geography at Clark. In the context of the graduate training program, it is assumed that students may wish to pursue two tracks: One, the traditional Ph.D. with its training and experiential requirements in research and in teaching (assuming minimal steps for competence in the latter); the other, the Ph.D. with training related directly to the competence of individuals as college Geography teachers, the thrust being in a combination of work relating to the teaching and learning of Geography as a Social Science, and specialization in one major sub-field in Geography. The School of Geography fosters student and faculty exchange with other institutions, including institutions outside the field of Geography and with Geography departments elsewhere. Clark has long encouraged ties with foreign Geography students and faculty. Focus in recent years has also included links with developing institutions in the U.S. through training of prospective faculty and facilitating programs.

Specialized Programs in Sub-Fields: The curriculum is organized to focus on specialized programs in sub-fields of Geography. Such sub-fields are developed around a series of sequentially-oriented courses which, in general, occupy from one-third to no more than one-half of the student's formal doctoral program. The sub-fields are organized in accordance with the interests, competencies and breadth of the staff. Programs in Environmental Management, Political Geography, Urban Geography, Geomorphology, Historical Geography, Cultural Geography, Geography and its Teaching, are examples of concentrations. Minor field concentration is also required, permitting, as a side benefit, shifts in the major concentration or sub-field. Therefore, even those students who arrive with pre-conceived notions about the major concentration will have opportunities to switch to other fields. In general, sub-fields are organized around committees with three to/five staff members. Responsibility for supervision of the student's course, dissertation and other training experiences is with the sub-field advisor.

In organizing the curriculum in this specialized structured manner, there is neither the intention nor the desire to exclude faculty and students who do not wish to operate within the framework of a formal sub-field. Students may wish to create their own personalized programs or fields of concentration outside of the formal sub-fields. The only limit to this lies in the general nature of the offerings and in the interests and competencies of staff. Where formal specialized programs do not exist, it becomes the responsibility of the major advisor to develop, together with the students, a program whose various prerequisites will follow the general form and intent of the Clark Graduate Geography program. Development and evaluation of specialized programs rests heavily on the activities of joint student-faculty committees. Passing of prerequisites (e.g., substantive course background, statistical methods, computer science, or cartography) is essentially the responsibility of the specialized concentration, as is the encouragement of cross-disciplinary training.

Orientation Program for Entering Graduate Students: All entering graduate students are required to take Geog. 396a, *Approaches to Geography* — a series of presentations by various members of the faculty which will survey research efforts in specific subfields and then continue with a Workshop concerned with approaches to learning, the development of a sense of problem, and scientific inquiry. In addition to entering students, some continuing students are invited to participate and at the end of the Workshop those students who wish to continue may do so through some form of directed study on an individual or group basis.

Formal Course Requirements: Other than those courses considered prerequisite to the specialized or individually-tailored program, no formal course requirements are set. It is the full responsibility of a student's advisor to require that a student take courses in areas of deficiency. Such courses might be required on a formal basis, on an audit basis, or through organized readings.

Proficiency and Research Papers: two formal papers are required. A proficiency paper, normally submitted during the second semester of the first year, and a research paper in the field of specialization, normally submitted during the second year. Both papers are brief and in the style and form of scholarly articles.

The Proficiency Paper: all incoming students are expected to present the proficiency paper no later than between March 15th and April 15th of the academic year. The objectives of this paper are two-fold: (1) to evaluate a student's ability to think and write logically and to articulate a research problem, and (2) to identify individual strengths and weaknesses as a guide to future course work and needs. The paper should normally not exceed 30 pages (unless the M.A. thesis is presented), excluding specialized bibliographical references, and should represent a finished piece of work in both style, sense of research problem and findings. The style should follow Turabian in terms of what is expected of a scholarly article. The paper may be generated within the context of the Orientation Program. It is expected that this paper will be read by three individuals, the major reader drawn from the research area and two members of the faculty who play the role of generalist-readers.

The Research Paper: As a prelude to the development of a doctoral dissertation proposal, each student is expected to submit an advanced research paper (15-30 pages in length) in his field of specialization approved by his major advisor. This paper is to be submitted as demonstration of his ability to research a problem in depth and to write it in publishable form (cf. Turabian). Generally the research paper is written in connection with a course or seminar taken in a specialized field and is submitted during the second year. Distinguished from the proficiency paper which is likely to show only preliminary inquiry into a problem area, the research paper is expected to evince mastery of the topic. The advisor is responsible for approving the paper and submitting it to the Geography Office.

The research paper is a prerequisite for the pre-doctoral MA. Should a student not desire to apply for this M.A., he or she need not submit the research paper. However, it is assumed and strongly urged that all students apply for the pre-doctoral M.A. and submit a paper.

Residence Requirement: A three-year residence beyond the A.B. degree is required for the Ph.D. program. One of the years in residence must be the year in which the dissertation proposal is submitted and approved, and, as part of the three-year residence the student must remain in residence for one semester (or one summer under direct supervision) following approval of the outline to work on the dissertation. After approval of the dissertation proposal, if the dissertation is not completed by the end of four years, the proposal must be submitted for re-approval. One prerequisite for such reapproval is provision for one academic semester's residence during the next year to work on the dissertation. (Twelve weeks during the summer is considered the equivalent of an academic year semester for this purpose, with the proviso that a faculty member be in residence at Clark during the summer and express a willingness to supervise.) Upon completion of all formal requirements, save the completion of the dissertation, the student is expected to file for candidacy with the Graduate School, unless specific permission not to file is granted by the School of Geography. Students entering with an M.A. in a field other than Geography will be expected to take essentially the three year residence program. Students entering with an M.A. in Geography from another institution may expect to complete their residence in five semesters, or two and one-half years.

Teaching and Research Prerequisite: Some teaching and research experience at Clark (or its equivalent at another institution) is prerequisite to the Doctor's degree. Every effort is made to organize various forms of internships to provide on-and-off campus training activities, at the teaching and research levels, generally at the end of the second year of residence.

DOCTOR OF PHILOSOPHY

A. *Language and/or Alternate Requirement:*

Options to examination in a traditional foreign language are available. These include (1) computer science, (2) statistical methods, and (3) cartography; in addition, other options can be required or made available by individual concentrations, with the approval of the faculty. The requirement varies with the concentration.

B. *Field Camp*

Field Camp is not a general requirement, but is offered and may be designated as a requirement by specific concentrations.

C. *History and Philosophy of Geography*

The history and philosophy of Geography is required as part of the Ph.D. examination, in the form of a written qualifying essay related to the major sub-field of concentration, demonstrating a knowledge of the intellectual history of the concentration and of its relations to the remainder of the discipline.

D. *The Ph.D. Examination*

All Ph.D. candidates must prepare themselves for examination in three fields. The major field examination consists of a 90 minute oral examination. The student may opt for either a 45 minute oral or a 3 hour written examination in each of the two minor fields. Selection of fields should be made in consultation with the major advisor and the supervisory committee at least two months in advance of the examination dates, and is subject to departmental approval. In selecting the three fields, breadth in an interrelated set of sub-fields, depth in connection with the proposed dissertation topic, or competencies and availability of staff are considerations.

Under normal circumstances it is expected that the language requirement (or its alternatives) will have been successfully met prior to the student's taking the Ph.D. examination. Approval of the dissertation proposal may precede the Ph.D. examination. Doctoral examinations are not normally conducted between May 1 and September 15, and should be requested 60 days before the desired date.

E. *Committee System for Ph.D. Dissertation:*

The dissertation committee is composed of five faculty members, with responsibilities for: (a) approval of the outline; (b) reading and reviewing of the dissertation (two readers and three reviewers); and (c) participating in the dissertation defense. When the dissertation proposal has been approved by the committee in its entirety or majority, a letter to this effect shall be submitted to the Geography office by the first reader together with 15 copies of the proposal. The director of the School will then circulate the proposal to each member of the faculty for comments and final approval will be made by the Director in light of these comments.

When the draft of the dissertation has been approved by the committee, three copies of the draft with a letter to the effect of the approval, signed by the first reader, will be submitted to the Geography office. The director will then inform the faculty that these copies are available for examination for a period of two weeks. Anytime after the end of the two week period, the defense may be scheduled. In addition to the committee, any member of the Clark faculty (geography or other departments) is invited to participate in the defense. A week before the defense date, notices will be given of the defense to the Dean of the Graduate School. If the defense is adequate, then the dissertation in final form is delivered, with two copies to the departmental office and the ribbon copy to the Registrar.

Master of Arts: While the thrust of the Clark Geography Program is at the doctoral level, two types of M.A. degrees will be made available:

A. *The Pre-Doctoral M.A.*

Students working toward the Ph.D. will be granted, upon request, an M.A. degree at the end of the required residence period, having completed: (a) the dissertation proposal; (b) required course work; (c) the Ph.D. preliminary examination; and (d) a formal research paper approved by the concentration advisor.

B. *The Non-Doctoral M.A.*

Normally no later than at the end of the first semester of the second year of residence, after a review process that includes a proficiency paper in the concentration at the end of the first year, students may opt or may be advised to shift to a terminal M.A. degree, under which circumstances they will be expected to drop one or two courses in order to write a thesis. This thesis is envisaged as a research paper or short article (15-30 pages), demonstrating an ability to define a problem as well as serving as evidence of research competence. The thesis would be presented in a manner as to meet the form and standards of a professionally acceptable article, and will be defended as the Master's Oral Examination.

After approval by a committee consisting of the advisor and two other faculty of the student's choosing three copies of the final draft with a letter by the major advisor noting committee approval will be delivered to the Geography office. The director will then announce to the faculty that the draft is available for examination. Anytime after the end of ten days, the defense may be scheduled. In addition to the committee, any member of the Clark faculty (geography or other departments) is invited to participate in the defense. A week before the defense date notice will be given of the defense to the Dean of the Graduate School. The thesis committee consists of the major advisor and two reviewers. After approval by the committee, three copies of the final draft are circulated to the faculty as a whole. Following defense of the thesis, two final copies are delivered to the departmental office and the ribbon copy to the registrar. Thesis defense should be conducted by May 1st to meet June commencement.

C. Since 1971-72, formal 7-and 5-year programs for Clark undergraduate students have been offered, leading to the Ph.D. and M.A. degrees in geography. At the undergraduate level, applicants must major in Geography and a dual or interdisciplinary field, and make application at the end of the first semester of the junior year. The A.B.-Ph.D. program may include one (the sixth) year off-campus, in residence at another university or agency. Admissions are limited to a very small number of highly qualified students and in subfields of concentration that are approximate to Clark's range of offerings. For specific information, contact the Director of the School of Geography. Applications to these programs should be submitted to the Geography Office no later than May 15th.

DISTINCTIVE FEATURES AND SPECIALIZATION

The School of Geography is housed in completely new quarters opened for the fall of 1970. Graduate students and Senior Geography majors are assigned carrels in the Geography Workroom. The Workroom and other sections of the Geography Building contain specialized equipment and research facilities for the use of students and staff. The John K. Wright Reading Room contains the Graduate School of Geography's working reading collection. The core of this collection is the personal library of Dr. John K. Wright. The collection is continuously updated by the addition of new publications in the field of geography plus subscriptions to major geographic and scientific journals. The Curriculum Library of the TTT Program (Training Teachers of Teachers) is also located in this Reading Room. The Libbey Library of the Geography Workroom serves as a student lounge.

Cross-disciplinary training, as evidenced by the four joint appointments held by geography faculty with other departments; the clustering of faculty research and teaching interests in several areas having to do with the man-environment system; and specialization in urban-economic, environmental management and behavior, international development, political, historical, cultural geography and geomorphology currently characterize the school.

PUBLICATIONS

A professional magazine, *Economic Geography,* is edited by a faculty member. Started at Clark University in 1925, it is the only journal published in English that specializes in economic and urban geography. The magazine has a world-wide distribution with a total circulation of about 5,000.

The graduate students, through the years, have maintained the Clark University Geographical Society. The annual publication, *The Monadnock* keeps School of Geography alumni in touch with each other and with news and scholarly activities in the School.

COURSES

Courses are grouped according to various subfields and within subfields according to level. Courses offered in alternate or subsequent years are not listed but can be found in the appropriate catalogue.

INTRODUCTORY GEOGRAPHY

001. TUTORIAL IN GEOGRAPHY.
An introductory tutorial for all geography majors offered over a 7-week module during the sophomore year. Includes discussion

with faculty leader on nature of the field, writing of short papers, learning what a library and other information resources are for, exploring one topical theme.
Half course, Modules 1,2,3,4. Staff.

011. SURVEY OF GEOGRAPHY.
"Survey" provides a general framework for understanding modern geography. Emphasis is placed on the interrelation of various approaches to geographic research as presently conducted in the Graduate School of Geography. Urban, physical, economic, political, social, cultural, historical, and regional themes will be developed with approximately one-third of the lectures being given by various staff members. The course is designed primarily for freshmen and sophomores and is a required course for geography majors.
Full course, Modules 1-2. Mr. Johnson, Coordinator, Staff.

ECONOMIC GEOGRAPHY

015. INTRODUCTION TO ECONOMIC GEOGRAPHY.
An introduction to economic geography focusing on location theory and economic development.
Full course, Modules 3-4. Mr. Feldman.

125. DEVELOPMENT PROBLEMS.
The several dimensions of development and the reasons why the gap between developed and underdeveloped countries is widening will be explored. Among the disciplines drawn upon will be: Geography, Government, Economics and Education. Problems analyzed will include: urban growth, land reform, unemployment and government planning. Tanzania, China, Brazil and other countries will be used as cases. Listed jointly with History 288.
Full course, Modules 1-2. Mr. Berry, Staff.

261. URBAN ECONOMIC GEOGRAPHY.
A systematic study of external and internal spatial relationships of cities and city systems. Urbanization viewed as a process in spatial organization involving mutual interrelations among decision units.
Full course, Modules 1.2. Mr. Karaska

361. SEMINAR IN URBAN ECONOMIC GEOGRAPHY.
Discussion, study and research on individual urban problems.
Full course, Modules 4-5. Mr. Karaska.

ENVIRONMENT

150. AQUARIUS: PLANNING FOR URBAN WATER RESOURCES.
Help wanted: Water resource planners for City of Aquarius to prepare 50-year plan for water supply, water quality, flood control and recreation. Includes opportunity to use advanced computer simulation. Group collaboration required.
Full course, Modules 3-4. Staff.

157. SPATIAL ASPECTS OF RESOURCE UTILIZATION.
Elementary theory of resources geography and economics. Problems of resource scarcity and economic growth, common property resources, location theory and resource utilization. Permission required for freshmen.
Full course, Modules 1-2. Mr. Feldman.

241. FOREST RESOURCE MANAGEMENT.
The elements of natural resource planning will be discussed. Students will be asked to develop a 50-year plan for timber and recreation for a small forest. (Same as Biology 295.)
Half course, Module 1. Mr. Howard.

257. SPATIAL ASPECTS OF RESOURCE UTILIZATION.

Advanced theory of resources geography and economics. Includes cost-benefit analysis and environmental impact statements, partial and general equilibrium models of pollution control.
Full course, Modules 3-4. Mr. Feldman.

260. POLITICS OF ENVIRONMENTAL MANAGEMENT.

Problems and processes in the public management of the natural environment. Course topics include the public interest, the planning process, decision-making theory, environmental law, allocation conflicts, public participation, intergovernmental relations. Case studies of selected environmental conflicts.
Full course, Modules 1-2. Mr. Kasperson.

286. MAN & HYDROLOGIC CYCLE.

A research seminar designed to explore leading questions of man-environment theory; stability and change, uniformity and diversity, diffusion and independent invention, free will and determinism, by relating variations in the hydrologic cycle to critical changes in human settlement, livelihood and social organization. Study will focus on long-term human occupance documentable for 6-8,000 years and draw together work in anthropology, archaeology, climatology, history, hydrology and geography.
Full course, Modules 3-4. Mr. Kates & Mr. Johnson.

350. RESOURCE MANAGEMENT: THEORIES, METHODS & MODELS.

Theory to explain how men use resources, methods to assess resources availability and project their use, and models to integrate theory and method to make decisions.
Full course, Modules 1-2. Mr. Kates & Staff.

Additional courses in Environment are offered in the Environmental Affairs section.

HISTORICAL/CULTURAL GEOGRAPHY

017. INTRODUCTION TO CULTURAL GEOGRAPHY.

The course is an ecological and historical approach to the study of cultures and culture change in a spatial context. A series of broad themes and problems are illustrated by case studies. Among the major themes to be considered are: adaption to environment, culture in prehistory, migration and the creation of culture areas, the world views of primitive, traditional and industrial cultures, culture landscape and the cultural geography of the United States. A schedule of three lectures and one discussion per week are integral parts of the course.
Full course, Modules 3-4. Mr. Bowden, Mr. Johnson.

140. CITIES AND CULTURE.

Studies of different internal structures and patterns of urban place in areas of traditional urbanization and in the developed and developing worlds. Emphasis will be upon the world views, cosmology of different culture groups and the expansion in cities, and in the organization of city regions.
Full course, Modules 1-2. Mr. Bowden.

245. HISTORICAL GEOGRAPHY OF THE UNITED STATES.

Primarily a study of economic and cultural patterns along the eastern seaboard from earliest settlement to about 1914, with special emphasis on nineteenth century developments. Lectures will include economic phenomena, theoretical approaches, cultural phenomena, morphological and perceptual approaches. Cross listed with History.
Full course, Modules 3-4. Mr. Koelsch & Mr. Peet.

253. HISTORICAL GEOGRAPHY OF NEW ENGLAND.

Research projects geared to the production of the future *Historical Atlas of New England.* Limited enrollment of ten students. Permission of instructors required.
Full course, Modules 1-2. Mr. Johnson & Mr. Koelsch.

254. PROBLEMS IN HISTORICAL-CULTURAL GEOGRAPHY.

Consideration of recent methodological and thematic literature in

historical-cultural geography and a research seminar dealing with selected case studies of cultural and historical change.
Full course, Modules 1-2. Mr. Bowden.

PHYSICAL GEOGRAPHY

014. INTRODUCTION TO PHYSICAL GEOGRAPHY.

A basic inquiry into components of geomorphology and climatology. The role of man as a critical agent in physical geography is included by looking at inadvertent climatic modification and alteration of the earth's surface by man's activities. Labs and field trip.
Full course, Modules 3-4. Mr. Lewis.

114. DYNAMICS OF THE EARTH'S SURFACE.

An introduction to environmental systems; processes affecting the earth's surface, gravity, water, biotic, wind and man related. Erosional-depositional rates, their causes and their results.
Full course, Modules 1-2. Mr. Berry.

211. TROPICAL ENVIRONMENT & ITS UTILIZATION.

The physical geography of the tropics will be analyzed with reference to climatological and geomorphological phenomena that exist in this area, and the ramifications of man's utilization of these areas will be explored. Permission of instructor required.
Full course, Modules 1-2. Mr. Lewis.

213. HISTORY OF GEOMORPHOLOGY.

A review of the development of the subject through the nineteenth and twentieth centuries. Special attention will be given to the historical development of current important research trends.
Half course, Module 3. Mr. Berry.

215. INTERMEDIATE FLUVIAL PROCESSES.

The focus will be on the relations between hydrology and geomorphology. The basic properties of hydraulic geometry, erosion and deposition will be explored. Prequisite: Geog. 114.
Half course, Module 4. Mr. Lewis.

223. SEMINAR ON SLOPES.

The geomorphic properties of slopes and current research will be analyzed. Permission required.
Full course, Modules 2-3. Mr. Lewis

224. TECHNIQUES IN GEOMORPHOLOGY.

The course is designed to work on a seminar/workshop basis. Techniques will be studied in relation to a project in which all students will participate. Sampling, field and analytical techniques will be involved.
Full course, Modules 3-4. Mr. Berry.

225. SEMINAR IN GEOMORPHOLOGY.

The class will analyze one or two real-world problems in applied geomorphology, devise study approaches to them and carry out some of the research. Involves airphoto and laboratory work.
Full course, Modules 3-4. Mr. Berry.

227. LAND & TERRAIN CLASSIFICATION.

A study of the problems of land and environmental analysis and of the storage and retrieval of data. Some emphasis on tropical developing lands.
Half course, Module 4. Mr. Berry.

POLITICAL GEOGRAPHY

130. REGIONAL POLITICAL GEOGRAPHY.

Concentrates on the impress of politics upon landscape in unique regional settings. Problem-oriented, within the context of world regional survey. Prerequisite: Geography 11 or Government 14.
Full course, Modules 3-4. Mr. Cohen.

230. POLITICAL GEOGRAPHY AND ITS SPATIAL CONSEQUENCES.

Theory and methodology in Political Geography. Political processes and landscape interaction, at varying levels of the political hierarchy (national, urban, international). Attention to such topics as equilibrium, systems, decision-making, political action space. Open to juniors and seniors. Prerequisite: Geography 11 or Government 14.
Full course, Modules 1-2. Mr. Cohen.

275. CITIZEN PARTICIPATION.

The purpose of this course will be (1) to analyze major theories as to the causes and forms of participation in the polities, (2) to examine our understanding of participation in the context of alternative models (e.g., pluralist welfare state, elitist power structure, technological state) of the polity and (3) to review the major means available to the powerless for utilizing participation as a means of creating power. Throughout, the course will establish an interplay between theoretical discussions of the nature of participation and a series of comparative analyses of case studies of participation.
Full course, Modules 1-2. Mr. Kasperson.

330. SEMINAR IN POLITICAL GEOGRAPHY.

A research topic will be handled by one or more teams with research concentration on theory formulation and testing. Responsibility for supplementary undergraduate tutorial sessions in connection with the sessions which are organized around the background and interests of seminar participants is included.
Full course, Modules 3-4. Mr. Cohen.

REGIONAL GEOGRAPHY

186. POLITICAL & ECONOMIC PROBLEMS OF EUROPE.

A general regional survey of Europe with emphasis on its political, economic problems and man-land relationships.
Full course, Modules 1-2. Mr. Van Valkenburg.

288. GEOGRAPHIC & ENVIRONMENTAL PROBLEMS IN ISRAEL.

This will be a field course offered in Israel. It will be based part of the time at the Departments of Geography at The Hebrew University and at Tel Aviv University and partly in a college settlement which will serve as a base for field work.
Full course, Module 5. Mr. Cohen.

READINGS, RESEARCH AND GENERAL

002. CAPSTONE SEMINAR IN GEOGRAPHY.

This seminar is for geography seniors and will be problem-oriented to produce an individual or team research product. It will use as its base a summary of the totality of each student's geography learning experience.
Half courses, Modules 1,2,3,4. Staff.

098. READINGS IN GEOGRAPHY.

Directed readings for undergraduates in an area of their choice. Consent of instructor required.
Variable credit.
Modules 1-2-3-4-5. Staff.

099. RESEARCH IN GEOGRAPHY.

Special research projects for undergraduates in an area of their choice. Consent of instructor required.
Variable credit.
Modules 1-2-3-4-5. Staff.

300. READINGS IN GEOGRAPHY.

Directed readings for graduate students in an area of their choice.
Consent of instructor required.
Variable credit.
Modules 1-2-3-4-5. Staff.

301. RESEARCH IN GEOGRAPHY.

Research projects for graduate students leading, usually, to the

dissertation proposal. Consent of instructor required.
Variable credit.
Modules 1-2-3-4-5. Staff.

368. PHILOSOPHY OF GEOGRAPHY.

Critical examination of some major themes and schools of geographic thought.
Full course, Module 4. Staff.

396. APPROACHES TO GEOGRAPHY.

Paradigms, themes and models in geographic thought offered as part of the orientation program for entering graduate students.
Full course, Module 1-2. Staff.

399. FIELD RESEARCH METHODS AND FIELD CAMP.

Theory and techniques of field (observational and survey) research; experimental design. Field camp with fee charged.
Two course value.
Module 5. Staff.

SOCIAL GEOGRAPHY

161. GEOGRAPHY OF AMERICAN POVERTY.

Viewpoints on poverty—the culture of poverty versus Marxist interpretations. The geographic (environmental) theory of poverty, poverty in rural areas, rural to urban migration, ghetto formation, poverty in cities, antipoverty policy and planning will be discussed.
Full course, Modules 1-2. Mr. Peet.

171. SOCIAL GEOGRAPHY.

Life styles are examined in terms of man's relationship to his milieu in various contexts. Landscapes are seen as expressions of an on-going dialogue between man and nature, and students are encouraged to explore their own personal experiences of their own milieux. Prerequisite: Geography 11.
Full course, Modules 1-2. Ms. Buttimer.

270. URBAN SOCIAL GEOGRAPHY.

An attempt is made to examine selected themes and research models concerning the experience of people in urban milieux. Among the perspectives are (1) an ecological view which seeks to elucidate symbiotic relationships between population and milieu; and (2) intentional view which seeks to demonstrate the dominant role of purposeful activity and human motivations in shaping behavior; and (3) a transactional view which explores the possibilities for engagement by actors in the process of spatial and environmental design. Prerequisite: Geography 11 and 261.
Full course, Modules 1-2. Ms. Buttimer.

272. GEOGRAPHY OF SOCIAL PROBLEMS.

One module will be devoted to developing general perspectives on the origins of social problems under conditions of "advanced" capitalism. The second module will be devoted to individual research followed by group presentation of findings and discussion. Emphasis will be placed on social policy and social planning.
Prerequisite Geog. 161.
Full course (divisible).
Modules 3-4. Mr. Peet.

273. HUMAN EXPERIENCE OF SPACE.

Exploring the notion of *lebenswelt* (life world) as a meeting ground between geography and phenomenology.
Half course, Module 4. Ms. Buttimer.

370. SEMINAR IN MARXIST GEOGRAPHY.

Group reading and discussion of Marxist theory leading to evolution of Marxist perspectives on the major fields of social and economic geography.
Full course, Modules 1-2. Mr. Peet.

371. SEMINAR IN SOCIAL GEOGRAPHY.

An attempt to view the landscape as an on-going dialogue (or tension) between people and milieux. On both sides certain filters will be identified through which people (human subjects) evaluate, use and perceive the landscape. Particular attention will be paid to problems of urban design, delivery of urban services and the administrative regionalization of city space. Prerequisite: Geog. 270.
Full course, Module 4. Ms. Buttimer.

TEACHING AND LEARNING

203. INTRODUCTION TO TEACHING.

An introduction to the construction and development of learning-teaching situations in geography. Required of all students in the history-geography *Teaching Cluster.*

Two course value.
Modules 3-4. Mr. Knos & Staff.

204. CURRICULUM DEVELOPMENT & ANALYSIS.

A consideration of the assumptions about learning, teaching and knowledge which are incorporated in the full range of curriculum materials presently available for teaching geography and history. Each student will prepare a curriculum plan suitable to individual educational objectives for teaching history or geography. The course is required of all students in the history-geography *Teaching Cluster.*

Full course, Modules 1-2. Mr. Knos & Staff.

205.1. METHODS OF TEACHING & RESEARCH IN EDUCATIONAL SYSTEMS.

An analysis of group and personal experiences of four components—spatial, social, political, and psychological—which function in classrooms and which hinder or enhance learning. This course provides substantive input for the curriculum development course and is required of all students in the history-geography *Teaching Cluster.*

Full course, Modules 1-2. Mr. Knos & Staff.

205.2. EDUCATION & GEOGRAPHY INTERNSHIP SEMINAR.

Full course, Modules 3-4. Mr. Knos & Staff.

206. AUTOBIOGRAPHY WORKSHOP.

A consideration of how students have learned in their own lives as a prerequisite to helping others to learn. The course seeks to engender an appreciation of both uniqueness and generalization in the process of teaching any social science discipline.

Half course, Modules 1-2. Mr. Knos & Staff.

208. ATLAS IN GEOGRAPHIC LEARNING.

Theoretical considerations, principles, and the process of developing the Atlas as a geographical information system—the Oxford World Atlas as a case study.

Half course, Module 2. Mr. Cohen.

TECHNIQUES IN GEOGRAPHY

019. MAPS & MAPPING.

Personal maps and mapping systems. The design and structure of maps and their history. Map reading and interpretation. A non-technical, introductory course.

Full course, Modules 3-4. Staff.

110. INTRODUCTION TO STATISTICAL GEOGRAPHY.

Principals of inferential statistics will be introduced. These will include point estimation, internal estimation, sampling distributions, hypothesis testing and correlation techniques.

Full course, Modules 1-2. Mr. Howard.

112. INTRODUCTION TO MATHEMATICAL GEOGRAPHY.

Mathematical techniques as used in spatial analysis. Emphasis is on the philosophy of the use of mathematics rather than the mathematical tools themselves. Spatial statistics will be explored in the same direction. Permission required for freshmen.

Full course, Modules 1-2. Mr. Feldman.

191. INTRODUCTION TO CARTOGRAPHY.

An introduction to cartography and the mapping process with emphasis on problems of scale, resource materials and compilation. Fundamental aspects and use of major types of map projections and examination of transformations to non-geographic spaces (cartograms).

Full course, Modules 1-2. Mr. Chang.

193. CARTOGRAPHIC GENERALIZATION.

Elements and controls of generalization and their application to geographic and thematic data. Data for maps, their manipulation and symbolization. Mapping of point, line and area data.
Full course, Modules 3-4. Mr. Chang.

212. COMPUTER PROGRAMMING.

Fundamentals of FORTRAN IV are presented. Designed for students with no mathematics beyond high school. Emphasis on numeric applications.
Full course, Module 3. Mr. Howard.

247. QUANTITATIVE METHODS IN GEOGRAPHY.

Multivariate analysis including analysis of variance, multiple location and correlation analysis, miscellaneous special statistics.
Full course, Modules 3-4. Mr. Chang.

291. BASIC MAP DESIGN.

Graphic elements of map design. Prerequisite: introductory cartography.
Full course, Modules 1-2. Mr. Chang.

292. CARTOGRAPHIC TECHNIQUES.

Positive and negative artwork and basic photographic methods for map preparation.
Full course, Modules 1-2. Mr. Chang & Staff.

293 CARTOGRAPHIC PRODUCTION.

Complex art work and proofing. Printing and nonprinting processes.
Full course, Modules 3-4. Mr. Chang & Staff.

295. WORKSHOP IN MAP DESIGN AND PRODUCTION.

Selected problems involving development and analysis of effectiveness of alternative solutions to mapping problems.
Full course, Modules 1-2. Mr. Chang.

URBAN GEOGRAPHY

262. WORKSHOP IN URBAN PROBLEMS.

Deals with the process of decision-making in placement of utilities in the urban landscape. A series of locational and developmental problems are posed for consideration within the context of a city.
Full course, Module 5. Mr. Knos.

266. COMMUNITY PLANNING.

Individual and group research on problems in Worcester and planning to counteract these problems. Limited enrollment.
Full course, Modules 3-4. Mr. Peet.
Descriptions for the following courses may be found listed under the appropriate departmental offerings.

The following courses are directly related to geography offerings. For description and details please refer to course listings within the departments.

Environmental Affairs 201. APPLICATION OF SYSTEM ANALYSIS.

Mr. Schwarz.

Environmental Affairs 202. BIOSPHERE.

Mr. Reynolds.

Environmental Affairs 203. MAN'S PERCEPTION OF HIS ENVIRONMENT.

Staff.

Environmental Affairs 204. ENVIRONMENTAL PLANS AND PROGRAMS.

Mr. Schwarz.

Education 203, 204, 205, 206, 208, and 217. (These courses are part of the *Teaching Cluster* in History, Geography, and Education.)

Geology 11. INTRODUCTION TO GEOLOGICAL CONCEPTS.

Mr. Lewis.

Geology 171. ENVIRONMENTAL GEOLOGY.

Mr. Lewis.

Technology and Man 201. ENERGY AND SOCIETY.

Mr. McClintock and invited guest lecturers.

GEOLOGY

11. INTRODUCTION TO PHYSICAL GEOLOGY.

The important geologic concepts needed to both understand our planet's structure and provide the foundation for advance study in the geological sciences will be covered. Recent findings in geophysics, geochemistry, oceanography and space science will be related to the subject matter of classical geology. Lecture.
Full course, Modules 1-2. Mr. Lewis.

101. PALEO-ZOOLOGY.

Refer to description under Biology.

171. ENVIRONMENTAL GEOLOGY.

The application of geological specialities to environmental problems. Geologic processes, earth resources, and engineering properties of rocks and surficial deposits as important to human activities will be emphasized. Prerequisites: Geology 11 or Geography 14. Lecture and discussion.
Half course, Module 3. Mr. Lewis.

GOVERNMENT AND INTERNATIONAL RELATIONS

DEPARTMENT FACULTY

Morris H. Cohen, Ph.D., Professor of Government; Representative, Washington Semester Program

Cynthia H. Enloe, Ph.D., Associate Professor of Government and International Relations; Director of the IUPP Graduate Program*

Allan E. Goodman, Ph.D., Associate Professor of Government and International Relations; Department Chairman*

Roger E. Kasperson, Ph.D., Associate Professor of Government and Geography**

Knud Rasmussen, Ph.D., Associate Professor of Government; Head Tutor, The Tutorial Program

Sharon P. Krefetz, Ph.D., Assistant Professor of Government, Director of Interdisciplinary Studies

Onkar S. Marwah, Ph.D., Assistant Professor of Government and International Relations

Ivory Robinson, Ph.D., Assistant Professor of Government; Director of the Honors Program

Saul B. Cohen, Ph.D., Professor of Geography, Director of the Graduate School of Geography and Adjunct Professor of Government and International Relations

Paul G. Taylor, M. Sc., Visiting Professor of Government and International Relations (London School of Economics)

Ann T. Schulz, Ph.D., Visiting Assistant Professor of Government and International Relations

*On leave of absence 1974-75

**On leave of absence, 1974-75, Modules III and IV

TUTORS, Department Tutorial Program
Arnold C. Bailey, A.B.
Tilton M. Barron, B.L.S.
James M. Galliher, B.A.
Sheldon L. Green, B.G.S.
Mel L. Greenberg, L.L.B.

Marion Henderson, B.L.S.
Percy C. Hintzen, B.S.Sc.
Lawrence L. Landry, B.A.
Robert K. Massey, A.B.
Bernard Ntegeye, B.A.

VISITING COMMITTEE, 1974-75 to 1976-77

Thomas J. Anton, Ph.D., Acting Director, Institute of Public Policy Studies, University of Michigan
Fairman C. Cowan, L.L.B., Vice President and General Counsel, Norton Company
Jacob Hiatt, A.M., President, Rand Whitney Corporation
Janet Levine, A.B., Graduate student, Department of Political Science, M.I.T.
Robert K. Massey, A.B., Spencer Trask and Company, Inc.
Roberta S. Sigel, Ph.D., Department of Political Science, Douglass College, Rutgers University

STAFF

Marjorie A. Pearsall, Administrative Assistant

PROFESSOR EMERITUS

Sherman S. Hayden, Ph.D., Professor of International Relations, Emeritus

UNDERGRADUATE PROGRAM

Nature and Purpose

Concentration in the Department is designed to provide students a balanced program of work in social science emphasizing the interdisciplinary study of politics and political behavior. The Department seeks to maximize teaching and research resources by providing all students interested in social science early access to small seminars and contact with faculty research. For those who will major in the Department, this program will lead to some form of student-faculty independent research by the senior year.

At the beginning of the sophomore year, every student concentrating in Government should complete a Plan of Study (on a form provided by the Department) with a selection of courses sufficient to meet the requirements set forth in the Announcements on Concentration in Government. This plan should be discussed with, and must be signed by, a faculty member representing the Government Department. The form should be returned to the Department Office by the beginning of November.

The Plan of Study is a preliminary statement of intent by the student and may be altered or amended after consultation with the advisor, provided the selection of courses satisfies the requirements of the Department and the College.

Each time a student changes his academic program, he is required to file a new Plan of Study with the Department.

Departmental Requirements: Nine full courses for the major; three full courses for the related field.

Major

A. Political Studies Seminars: Two must be taken (normally, one in the Freshman and one in the Sophomore year). This constitutes your introduction to political science. Note: See offerings under Government 156-158, 160-165, 169-174.

B. Electives: Seven additional courses in government are required - including if possible, tutorials - with the student choosing among the following fields:

Political Thought, Behavior and Analysis
American Government and Politics
International Politics and Foreign Policies
Comparative Politics and Area Studies
International Urbanization and Public Policy Studies
Self-designed (by student and faculty advisor)
Tutorials
Honors Program

Note: Tutorial in Political Science (for Sophomores and Juniors): Designed as an intensive study group, each program will be tailored to individual interests and needs. Emphasis will be placed upon the examination of established theories, development of propositions about political phenomena, and application of both to concrete cases for discussion. Approximately 25 pages of written work will be required and, at the end of the tutorial, students will receive both a grade and a copy of their tutor's written evaluation of work and participation.

Related Field

A. Three full courses in any other social science.

HONORS PROGRAM

The /honors program in Government and International Relations is a two-year program, consistent with University guidelines for honors programs as described in the Clark University Bulletin. The junior year consists of independent research under the guidance of a faculty supervisor. In the senior year the honors candidate will write a thesis, this being the substance of the program. Honors work affords majors a unique opportunity to pursue prolonged research in an area of their choice. Successful completion of the program leads to, among other awards, graduation with honors in Government and International Relations.

Government majors interested in the program should apply in the last semester of the sophomore year or in the first two weeks of the junior year. Provisions have been made for Washington Semester and Junior Year Abroad programs to mesh with this application date. To apply to the program, Government majors should:

1. Write a letter to Professor Ivory T. Robinson, program director, proposing an independent project for the spring semester of the junior year and indicate an interst in eventually writing a senior thesis.
2. Submit a grade transcript.
3. Submit a letter of recommendation from a faculty member.

Students admitted to the honors program will be notified in September of their junior year. Transfer students, juniors and seniors applying for admission must follow the same procedure. In addition thereto, they must submit written work which reflects their ability to write a senior thesis. All questions should be referred to Professor Robinson, Room 309 Academic Center.

Special programs in the department include the Sherman S. Hayden Seminar in International Affairs, the Washington Semester Program under the auspices of the American University in Washington, D.C., opportunities to serve on the editorial board of the Student Journal of Politics, and the Sister Universities Exchange Programs.

GRADUATE STUDIES IN INTERNATIONAL URBANIZATION AND PUBLIC POLICY

International urbanization is likely to emerge as a fundamental problem for the future of societies. The world by 1980 is likely to be a predominatly urban one. There will be shifts in the distribution of city dwellers globally; no longer will one be able to contrast the developing world as "rural" and the developed world as "urban." Urbanization and development are taking on a far more complicated relationship, a fact which alters the political implications of each. In this decade alone the proportion of the world's population living in cities will increase from 38% to more than 60%, a transformation that even institutions of the most developed countries will find difficult to manage.

Our program is designed to focus on the nascent efforts of several disciplines on anticipating and planning for the urban challenges of the future. We perceive international urbanization to be a phenomenon that demands both comparative analysis cross-nationally and special concern with the processes of public policy intended to affect urban growth. As a field of graduate study, our approach to public policy denotes an orientation in teaching and research designed to coordinate and stimulate an atmosphere of maximum innovation and individual responsibility. Such an environment also permits the program to service graduates with a variety of career interests. Recipients of the Masters degree have pursued doctoral degrees, have taken up posts in American policy-making agencies, and have followed careers in international organizations involved in development.

The graduate program is two years in duration and results in an M.A. in International Urbanization and Public Policy. The program stresses a multi-disciplinary approach. In addition, students are expected to develop social science analytical skills and an expertise in a particular geographic region, whether it be the United States, Europe or an area of the underdeveloped world. Individual research is an integral part of the program and will be designed to assist the graduates to decide their own career courses subsequent to the M.A.

All new programs imply choices in how a student's program of study will be specifically determined. The International Urbanization and Public Policy program is committed to interdisciplinary, comparative analysis but within that general framework there is great flexibility so that participants can pursue their own urban-related interests.

The program integrates course work with field research and internship opportunities. It provides possibilities for joint research, shared by faculty members of this Department and students and faculty of other departments. Each student in the program prepares a thesis in his field of special interest, under the supervision and with the assistance of the appropriate member of the Department, and defends the thesis orally before an interdisciplinary committee.

In addition to this research, each student is expected to complete at least 30 semester hours of course work with at least a 3.0 average. Most, in fact, complete in excess of 60 semester hours, especially if internships and other external projects are included. Frequent student-faculty colloquia enhance the possibilities for group work and contact. Each student is assigned a principal advisor at the beginning of the academic year; each year's program must be approved by the Chairman by 10 October.

Independent research projects normally await the second year, when they are emphasized and encouraged; if such research is undertaken off campus, it is desirable that the last months of the program should be spent in on-campus thesis research and writing.

Proficiency in a foreign language is very desirable, though not strictly required. All students must, however, demonstrate basic proficiency in quantitative analysis and methodology. Finally, it is presumed that every student will complete the program within the normal period of residence.

The degree of Doctor of Philosophy is being held in abeyance at the present time; however, the Department anticipates its reintroduction in the near future. The present program will facilitate the transition to advanced work elsewhere, whether within or without a university.

COURSES

POLITICAL STUDIES SEMINAR PROGRAM

Note: The following Political Studies Seminars are open only to freshmen and sophomores.

156. POLITICAL ANALYSIS.

This course is an intensive introduction to political science. It will include in its scope polarization, systems analysis, political culture and ideology; these will be viewed as steps leading from a micro to a macro understanding of political events as well as the values underlying these. Although the course is open to anyone, it affords a special opportunity for students who upon choosing or changing majors want to satisfy departmental freshman requirements.

Emphasis will be upon specific analysis of aspects of social justice and an attempt will be made to see to what extent social justice is carried out, in particular as it relates to institutionalized persons. There will, therefore, be visits to different kinds of institutions. In this way the class will draw links between theory and reality.

Format: Four 75-minute discussion-lectures per week plus some visits to institutions. Limit 15. Freshmen/Sophomores.

Full Course, Module 5. Mr. Rasmussen.

157. PUBLIC POLICY: MACHIAVELLI REVISITED.

Thie course will investigate basic theories of decision making and policy making at both national and international levels of politics. Particular emphasis will be on comparative case studies from U.S., Western Europe and the developing countries.

Full course, Module 1. Mr. Rasmussen.

158. MICROPOLITICAL ANALYSIS.

Not offered, 1974-75.

The individual in mass society; a socio-political study and analysis of individual attitudes, values and beliefs, and their relation to role behavior and group dynamics. Some emphasis on theories of socialization and communication as devices for political analysis.

Full course. Mr. Rasmussen.

160. THE POLITICAL SYSTEM: MACROPOLITICAL ANALYSIS.

Not offered, 1974-75.

The seminar will discuss modes of analysis of political systems drawing on the works of Almond & Powell, Dahl, Lasswell, Lipset and Easton. These will be subject to intensive study and analysis, in order to accept, modify, or reject them, based on American and developing countries' experiences.

Full course. Mr. Rasmussen.

161. EXTINCTION OR EVOLUTION.

Not offered, 1974-75.

"If Sparta and Rome perished, what State can hope to endure forever?" Does Rousseau's question become relevant to 20th century societies? How long will the U.S. last, and what will be the causes and consequences of its demise? This seminar will examine contemporary theories on the development of society and analyze contemporary proposals and perspectives on the future existence of society. Discussions will center on the work of such activist-thinkers as Ivan Illich, Marcuse, Raskin, and Reich.

Full course. Mr. Rasmussen.

162. COMMENTARIES ON AMERICAN GOVERNMENT.

Among the books analyzed and discussed are: The Federalist Papers, DeTocqueville's Democracy in America, Bryce's The American Commonwealth, Wilson's Congressional Government, Lippman's The Public Philosophy and another still to be selected.
Full course, Modules 3-4. Mr. Cohen.

163. POLITICS AND SOCIETY.

Not offered, 1974-75.

A study of the utility and limits of employing social variables to explain political phenomena. The major social variables to be explored as independent variables are: social class, education, sex, religion, economic growth, and membership in voluntary associations. Among the political phenomena to be viewed as dependent variables are: political socialization, political participation, alienation, mass movements, violence, stability vs. instability, and "democracy" vs. other forms of government.
Full course. Ms. Krefetz.

164. COMPARATIVE POLITICAL BEHAVIOR.

The topic of this seminar is domestic political violence. Readings will center upon ideological and social class explanations of revolutionary and other forms of violent behavior. The readings range from revolutionary treatises to empirical quantitative studies of domestic insurrections. This seminar will introduce to students the various theories of political behavior.
Full course, Module 3. Ms. Schulz.

165. INTRODUCTION TO COMPARATIVE POLITICAL ANALYSIS.

Not offered, 1974-75.

The seminar will survey the growth of the field of comparative politics and its methodology as focal points for analyses in political research. A series of proporitions about the nature of political order and political change will be discussed in order to examine the causes and results of revolution, economic development and the creation of political institutions and political power in developing societies. Emphasis will also be placed upon the use of case studies (chosen by students) in comparative analyses and upon the development of standards of evidence in comparative research.
Full course. Mr. Goodman.

169. INTRODUCTION TO INTERNATIONAL RELATIONS.

Growth and probably Boundaries of the discipline; the change from 'Diplomatic History' to the 'Systems' approach in International Relations; the continuing significance of history as providing the political-sociological premises for International Relations study (including some non-western heresies); International Legal Structures and their limits; the role of military power and the concept of national security as influences on the nature of International Politics; Human Ingredients in International Process; Alternative approaches to Explanation (Quantitative and non-Quantitative).
Full course, Modules 1-2. Mr. Marwah.

170. AMERICAN POLITICAL BEHAVIOR.

This course will have two major foci: (1) the political attitudes and behavior of the "American Voter" and (2) the political attitudes and behavior of American Congressmen. Topics to be covered include: the social and psychological determinants of voting (and non-voting), the origins and significance of partisan attachments, the development and functions of public opinion, the social backgrounds of Congressmen, their conceptions of their roles and constituencies, and the interaction between voters and their Congressmen.
Full course, Modules 1-2. Ms. Krefetz.

171. POLITICAL DEVELOPMENT.

Not offered, 1974-75.

Karl Marx wrote, referring to independent, developing countries of his time, "De te fabula narratur" — of you the story is told. Has the story of presently defendent, underdeveloped countries been told? Do the presently industrial countries show the less developed countries the image of their future? We will examine the patterns of development of developed and less developed countries. In the seminar we will criticize major development theories which consider these questions.
Full course. Mr. Robinson.

174. MODERN POLITICAL PHILOSOPHY.

Conceptions of human nature in modern political theory and the uses of a psychodynamic conception of personality for political thought. Readings from thinkers, such as Nietzsche, J. S. Mill, Sarte, Marx, and Freud. Topics include individualism, freedom, utopia, rationality and democracy.
Full course, Module 2. Mr. Robinson.

POLITICAL THOUGHT, BEHAVIOR AND ANALYSIS

198. THE PHILOSOPHY OF RIGHT AND LAW.

A close reading of Hegel's *Philosophy of Right and Law*, coupled with a discussion of the problems the text raises.
Full course, Modules 3-4. Mr. Robinson.

205.1 ROOTS OF POLITICAL THOUGHT.

A study of the development of Western political thought from the Socratic philosophies to Hobbes. The study will deal with the evolution of political thought in the context of influential, social, political, and economic forces.
Full course, Modules 1-2. Mr. Rasmussen.

205.2 RECENT POLITICAL THEORY.

A study of modern political theory as developed in the context of the social, political, and economic forces which have shaped Western thought since the French Revolution.
Full course, Modules 3-4. Mr. Rasmussen.

207. BLACK POLITICAL THOUGHT.

A study tracing a conscious development within the black community starting from the slave society and moving to the present. In the process, 3 lines of thought are developed: a) the political thought of accommodation, b) the political thought of protest, and c) the political thought of revolutionary confrontation. Permission of instructor required.
Full course, Module 3-4. Mr. Rasmussen.

219. WOMEN AND POLITICS.

An exploration of the political behavior of American women and the factors which condition their behavior, including: socialization and learning of sex roles, social background and life situation variables, and historical arrangements of political institutions. Among the questions to be considered are: Why are women generally less interested, less active, and less efficacious politically than men are? What are the characteristics of those women who *do* engage in political activity? What is the likely impact of the Women's Liberation Movement and women's issues such as abortion on the future behavior of women in politics? Special attention will be given to a consideration of conditions which facilitate or impede the recuitment of women to local political office, and students will conduct original research on women in politics in several New England cities, including Worcester. Prerequisite: One previous government course. Limit 15.
Half course, Module 2. Ms. Krefetz.

223. SEMINAR: PSYCHOLOGY AND POLITICS.

The seminar will examine the psychological roots of political behavior and will study how political and social existence shape character structure. The various conceptions of man in political theory e.g. (rational) and (irrational) will be examined. We will deal with this problem technically by examining modern American institutions. Various themes, such as parole of the patriarchal family, racism, sexism, and alienation will be pursued.
Full course, Modules 3-4. Mr. Robinson.

250. RECENT POLITICAL THOUGHT: THE CASE FOR SCANDINAVIA.

Not offered, 1974-75.

Twentieth century political thinking with specific reference to Scandinavian thought. Analysis of the contemporary impact of thinkers such as Kierkegaard, Strindberg, Ibsen and Hans Christian Andersen. The examination of major trends as they constitute either unique Scandinavian developments or reflect a broader European pattern of thinking.
Full course. Mr. Rasmussen.

287. SURVEY RESEARCH AND DATA ANALYSIS.

An examination of the techniques and methods involved in the use of survey research to gather political data. Topics to be examined include sampling, questionnaire construction, and coding of responses. Basic methods of data analysis will also be considered, for example: tests of significance, measures of association, and cross-tabulations. Students will, in addition, be introduced to the use of computers and SPSS, the Statistical Package for the Social Sciences, to aid in data analysis.

Intended primarily for advanced govt. majors planning to conduct independent research in the future. Preference to juniors and seniors. Limit 15.
Half course, Module 1. Ms. Krefetz.

370. POLITICAL SCIENCE RESEARCH: TECHNIQUES AND METHODS.

The major concern of the seminar will be with gaining an understanding of those social science techniques and methods which are most appropriate to conducting political science research. The course will focus on developing a research design, generating hypotheses, and building theories. General topics to be discussed include causal thinking, the notice of controls, and the concepts of validity and reliability.

Full course, Modules 1-2. Mr. Marwah.

AMERICAN GOVERNMENT AND POLITICS

Note: Listings under urban studies can be counted for concentration in the field of American Government.

150. INTRODUCTION TO AMERICAN GOVERNMENT.

An introductory study of the processes and efficacy of the American governmental system. Primarily devoted to an overview of contemporary aspects of the national government, the course includes problems of federalism, salient civil liberties issues, and the roles of Congress, the President, the Supreme Court and political parties in the decision-making process.

Full course, Modules 1-2. Mr. Cohen.

204. SEMINAR IN AMERICAN PRESIDENCY.

Not offered, 1974-75.

A study of the Constitutional and other powers and functions of the President and the Presidency via selected readings and individual research.

Full course. Mr. Cohen.

224. BLACK POLITICS IN THE UNITED STATES.

Not offered, 1974-75.

This course will analyze the distribution of power as it affects the Black community. Among those topics to be explored will be: Black congressmen and lobbies, Black politics in cities, the impact of Blacks on the bureaucracy and a comparison of Northern and Southern Black politics.

Full course. Ms. Enloe.

225. POLITICS OF BUREAUCRACIES.

Not offered, 1974-75.

Bureaucracies not only administer policy, they also formulate policy. This course will analyze what it means to be a "bureaucrat," what sorts of powers and pressures bureaucracy handles. Special attention will be given to the United States federal bureaucracy. Among topics to be explored will be the effect of bureaucracy on Indian politics, the relations of bureaus and Congress, the expansion of the White House organization.

Full course. Ms. Enloe.

251. AMERICAN POLITICAL PARTIES AND PRESSURE GROUPS.

A study of the structure and functioning of the American party system and the role of selected interest groups in American politics including some ethnic and economic influences. Special emphasis is placed on the processes and problems involved in the nomination and election of the President. Prerequisite: Amer. govt. desirable but not required.

Full course, Modules 1-2. Mr. Cohen.

254.1. AMERICAN CONSTITUTIONAL LAW (Non-Civil Liberties).

Not offered 1974-75.

Full course. Mr. Cohen

254.2. AMERICAN CONSTITUTIONAL LAW AND CIVIL LIBERTIES.

A study of the major developments and problems of American Constitutional law and judicial behavior approached primarily by analysis of court cases. Govt. 254b is the area of civil liberties and includes such issues as freedom of speech, press, and religion, civil rights and selected aspects of the rights of a person accused of crime. Emphasis is placed on recent and contemporary developments and on class discussion. Permission of instructor required. Limit 30.

Full course, Modules 3-4. Mr. Cohen.

255. SEMINAR IN THE LEGISLATIVE PROCESS.

A study of policy making in Congress, involving problems of legislative organization and procedure, leadership and presidential legislative relationships, examined primarily by the case

method and by individual research on particular pieces of recent legislation.
Seminar in Legislative Process.
Permission of instructor required. Limit 10.
Half course, Module 3. Mr. Cohen.
Seminar: Intensive Research in Legislative Process.
Prerequisite: Module 3, Govt. 255.
Half course, Module 4. Mr. Cohen.

257. SEMINAR IN AMERICAN ETHNIC POLITICS.

Not offered, 1974-75.

Full course. Mr. Cohen.

274. POLITICS OF THE AMERICAN SOUTH.

Not offered, 1974-75.

Perhaps the most rapidly changing political landscape in the United States is the South. There may even be a question whether "the South" is a distinct political entity in the 1970s. This course will raise that question and consider the ways in which the South stands apart from or merely reflects the larger national political system. The persistence of rural politics, the nature of the new Black politics, the rise of competitive parties will be among the topics analyzed.
Full course. Ms. Enloe.

INTERNATIONAL POLITICS AND FOREIGN POLICIES

102. NO MORE VIETNAMS.

Not offered, 1974-75.

A comprehensive review of how we got involved in Vietnam, what it meant to the Vietnamese, and what it reveals about the likelihood of similar involvements elsewhere in the future. Specific attention to the issue of what would have to change in the making of our foreign policy to assure that there would be no more Vietnams.
Full course. Mr. Goodman.

103. U.S. SECURITY: CONTEMPORARY CHALLENGES.

Not offered, 1974-75.

What are the major challenges to American security and foreign policies in the 1970s? Who are our adversaries and what are their aims? How do we assess the threats ahead? A review of international politics in the 1960s and 1970s aimed at developing perspectives on where we are and where we are heading.
Full course. Mr. Goodman.

104. POLITICS OF WEST EUROPEAN POLITICS.

Some of the major problems of contemporary politics in Western Europe are discussed, particularly, but not exclusively, those which affect the development of international organization in the area. Major themes are: differences between main political systems; national ideologies and attitudes towards sovereignty; tensions between the periphery and the centre in Europe — the problems of minority groups and the development of regionalism; problems of control in national assemblies; major problems in foreign policy — the Atlantic link, the French and the independence of Europe, the Ostpolitik of West Germany.
Full course, Modules 1-2. Mr. Taylor.

105. EUROPEAN INTEGRATION.

The main developments in international organization since the Second World War are considered. Institutions examined are the Council of Europe, the Organization for European Economic Cooperation, the European Coal and Steel Community, West European Union, and the European Economic Community. The working of the institutions and their origins and tasks will be placed in their context in the diplomatic, historical and economic circumstances of the time.
Full course, Modules 3-4 Mr. Taylor

196. CONTEMPORARY INTERNATIONAL POLITICS.

The interactions of Superstates, Middlestates, and Smallstates; International Politics vs. International Society, i.e., the ambivalent roles/needs of: Nation and World, War and Peace, Power and Weakness, Prosperity and Poverty, Freedom and Oppression, Perception and Illusion, Activity and Apathy, Revolution and Stability, Identity and Transformation; Cooperation and Conflict as the ongoing process of inter-state relations.
Full course, Modules 3-4. Mr. Marwah.

210. SEMINAR: THEORIES OF INTERNATIONAL POLITICS.

The major theoretical approaches to the study of international politics are considered. The advantages and difficulties of the scientific approach to the subject are discussed and compared with those of the traditional approach. Approaches to the broad character of international society are then analysed before examining theories on the making of foreign policy, on interactions between states and other members of international society, on problems of security and international order, and on the international system. The course concludes with an evaluation of theories about the future development of international society.

Full course, Modules 1-2. Mr. Taylor.

238. SEMINAR: TRANSNATIONAL PERSPECTIVES IN INTERNATIONAL RELATIONS.

Focusing 'Beyond the Nation State' in a world of Nations; Plebeians and Patricians in a spatially-divided world; the geography and economics of international needs; apportioning limited world resources, the environment, and technological growth; the role of International Organizations; contemporaneous strategies of waging peace, i.e., Arms Control and Disarmament approaches, International Security Systems, Alliance Formations, Utopian and Realist efforts.

Full course, Modules 3-4. Mr. Marwah.

239. THE UNITED STATES IN WORLD AFFAIRS.

The 'First New Nation'; the stages of role-change from Small Power to Super Power; American Nationalism and Internationalism; insular Republic and Global Actor; the American Paradigm and American Power for Other States in the twentieth century; Conflictual Interests; the Strategic Interaction of American and Soviet Ideologies in the post-War world; the parallel demand for humanism and realpolitik in American foreign policy.

Full course, Modules 3-4. Mr. Marwah.

288. REGIONAL INTEGRATION: CURRENT PROBLEMS IN THEORY AND PRACTICE.

The major theoretical approaches to regional integration are considered. The theoretical problems are illuminated with examples taken from contemporary West European integration. These include the problems of responsibility and representation and the role of the European Assembly; the Vedel Report; the proposals for monetary and economic union; voting powers of the states in the Council of Ministers; the development of transnational interest groups; and the changing role of the Commission.

Full course, Modules 3-4. Mr. Taylor.

289. THEORIES OF INTERNATIONAL INSTITUTIONAL COOPERATION.

A survey of the major approaches to the development of international organization. Views on the orgin, major roles, specific tasks, and contribution to international order and security, of international institutions. They range from ideas of Dag Hammarskjold to those of Thomas Hobbes.

Full Course, Modules 3-4. Mr. Taylor.

COMPARATIVE POLITICS AND AREA STUDIES

125. DEVELOPMENT PROBLEMS.

Refer to description under Geography.

Full course, Modules 1-2. Mr. Berry, Coordinator.
Ms. Schulz and others.

209. COMPARATIVE GOVERNMENT.

Not offered, 1974-75.

A comparative study of the major West European political systems. Study of the political historic development will lay the basis for comparison of modern functions of government. Stress is placed on political socialization and its importance for comparative politics.

Full course. Mr. Rasmussen.

226. GOVERNMENT AND POLITICS OF THE MIDDLE EAST.

The first module will cover political change within Middle Eastern countries from Egypt to Afganistan. The approach will be a topical one, focussing upon the social bases of politics, styles of political competition and leadership recruitment, and the relationship between political and economic life.

The second module will be devoted to international politics in the Middle East—esp. the Arab-Israeli conflict, the Persian Gulf and the issue of international integration in the Arab world.

National Politics
Half course, Module 1. Ms. Schulz.
International Politics
Prerequisite: Module 1, Gov. 226.
Half course, Module 2. Ms. Schulz.

227. INEQUALITY AND POLITICAL DEVELOPMENT.

This seminar will examine the relationship between political development and political, social and economic inequality in the Third World. The effects of the single-party state, of attempts at nation-building and of government-directed reform upon the distribution of status, influence and material goods will be explored. Readings will be interdisciplinary.
Full course, Module 4. Ms. Schulz.

228. SEMINAR IN COMPARATIVE POLITICS: POLITICAL REPRESENTATION.

This seminar will focus upon political representation in theory and practice. The basic theoretical question to be explored is which human characteristics ought to be represented by political leaders—geographic, occupational, idealogical, etc.? Empirically, what is the process thru which these characteristics achieve representation in various types of political systems?
Full course, Module 2. Ms. Schulz.

272. POLITICS OF CHINA AND JAPAN.

Not offered, 1974-75.

A comparative study of the contrasting paths of development taken by the Japanese and Chinese political systems. Among topics to receive special attention will be the conditions for revolution, the role of ideology, the political impacts of war and the strains of modernity.
Full course. Ms. Enloe.

273. SEMINAR: COMPARATIVE ETHNIC POLITICS.

Not offered, 1974-75.

This course will investigate the dynamics of political interaction in various multi-ethnic nations. Among those nations to be considered are South Africa, USSR, Britain, Malaysia and Nigeria. Particular focus will be on the ways in which ethnic group developments shape overall national political development.
Full course. Ms. Enloe.

279. GOVERNMENT AND POLITICS OF AFRICAN STATES: EAST AFRICA.

An examination of the impact of imperialism on the socio-economic structures of Uganda, Tanzania, and Kenya. Considerable attention will be devoted to developing a theoretical framework for studying politics in underdeveloped countries. The first part of the term will be devoted to the pre-colonial and colonial eras with special emphasis on the historical operations of imperialism in Africa and the types of socio-economic structures given rise to by its impetus. The latter part will focus upon the emergence and role of new states, their relation to political parties, class structure, economy, ideology, army, and to international capitalism. Special attention will be devoted to the questions of African Socialism and revolution in Africa.
Full course, Module 5. Mr. Robinson.

282. AFRICAN POLITICAL CHANGE.

A survey of political change in sub-Saharan African countries during the colonial and post-colonial eras. Major emphasis will be placed on themes including colonialism, nationalism, political parties, neo-colonialism and revolution. The presently colonial countries will also be studied.
Full course, Module 2. Mr. Robinson.

283. SEMINAR: SOCIAL CHANGE AND RACE RELATIONS.

Not offered, 1974-75.

A problem-oriented seminar, the goal being to objectify the uniqueness of African-American culture, to examine the socio-political and economic conditions under which it developed, and to relate this to the changing status of African people the world over.
Full course. Mr. Robinson.

INTERNATIONAL URBANIZATION AND PUBLIC POLICY STUDIES.

URBAN STUDIES

208. SEMINAR: GOVERNMENT AND POLITICS OF WORCESTER.

Not offered, 1974-75.

An overview of Worcester as an example of an American city as a subject for research. History, ethnic aspects, social and political organizations and problems will be examined. Emphasis on individual research. Preference to graduate students.
Full course. Mr. Cohen.

220. URBAN GOVERNMENT AND POLITICS.

Not offered, 1974-75.

The primary focus of this course is on the various socio-economic and political inputs that affect the functioning of American urban political systems. What are the resources and constraints which the imputs place upon and provide for the decision makers? Topics to be discussed include: the social, economic, and political nature of the city, the effects of the state and federal governments, relations between city and suburb, political structures and styles, the distribution of power, and race, ethnicity, and ethos theory. In the latter part of the course some attention will be given to differences in urban policy outputs, primarily in the fields of education and welfare. Where relevant, differences and similarities in the politics of urban areas outside the United States will be considered. Open to sophomores, juniors and seniors.
Full course. Ms. Krefetz.

221. SUBURBIA: PEOPLE AND POLITICS.

The growth of suburbs in the United States since the end of World War Two has had considerable impact upon the nature of our metropolitan areas. Why has this growth occurred? What are the characteristics of the people who live in suburbs? Is suburban homogeneity a myth or reality? How are suburbs governed? What is political participation like? What sorts of issues are important to suburbanites? Is there a national suburban policy? Ought there to be one? These are the major questions to be explored in this course. Open to Sophomores, Juniors, and Seniors.
Full course, Modules 3-4. Ms. Krefetz.

222. SEMINAR: PUBLIC POLICIES AND AMERICAN CITIES.

What difference does it make "who governs"? What sorts of variations are there among cities in their policy outputs in such areas as welfare, education, poverty, health, the police, and the criminal courts, and what accounts for the differences? After a critical review of the existing literature, research will be conducted on a policy area of the student's choosing in Worcester and/or other cities.
Studies on Urban Public Policy.
Prerequisite: Gov. 220 or permission of the instructor. Limit 15.
Half course, Module 3. Ms. Krefetz.
Field Research - an Urban Problem.
Prerequisite: Module 3, Gov. 222. Limit 15.
Half course, Module 4. Ms. Krefetz.

258. ADVOCACY PLANNING.

Not offered, 1974-75.

An examination of a decade's experimentation with advocacy planning as a form of citizen participation and as an adaptation to the failure of citizen participation. Various types of advocacy planning will be contrasted. An assessment of the empirical success of recent efforts. Possible future directions will be explored. Prerequisite: Geography or Government 275 or consent of the instructor.
Half course. Mr. Kasperson.

259. DISSENT.

Not offered, 1974-75.

An inquiry into the causes and forms of dissent and its relationship to citizen participation. Comparative studies of case histories of dissent. The second part of the course will be devoted to student research. Prerequisite: Geography or Government 275 or consent of the instructor.
Half course. Mr. Kasperson.

260. POLITICS OF ENVIRONMENTAL MANAGEMENT.

Problems and processes in the public management of the natural environment. Course topics include the public interest, the planning process, decision-making theory, environmental law, allocation conflicts, public participation, intergovernmental relations. Case studies of selected environmental conflicts.
Full course, Modules 1-2. Mr. Kasperson.

275. CITIZEN PARTICIPATION.

The purpose of the course will be (1) to analyze major theories as to the causes and forms of participation in the polities (2) to examine our understanding of participation in the context of alternative models (e.g., pluralist welfare state, elitist power structure, technological state) of the polity and (3) to review the major means available to the powerless for utilizing participation as a means of creating power. Throughout, the course will establish an interplay between theoretical discussions of the nature of participation and a series of comparative analyses of case studies of participation, including specific attention to advocacy and dissent. One method to be employed in the latter cases will be to examine life histories of advocacy and dissent efforts and biographies of the major actors. Some of the urban decision-making games currently available for educational use will be considered as supplements to the course.
Full course, Modules 1-2. Mr. Kasperson.

INTERNATIONAL URBANIZATION AND PUBLIC POLICY

371. INTRODUCTION TO INTERNATIONAL URBANIZATION AND PUBLIC POLICY STUDIES.

Not offered 1974-75.

An intensive review in the modular format of the relationship between urbanization and the development of public policy. Basic literature in the field will be blended with analyses of the development planning process in the U.S. and abroad. Specific topics to be addressed are: What is urbanization? What are its expected and observed political consequences? How do these consequences affect policymakers? What explains the absence of urban development policy in the national development planning context?
Full course. Mr. Goodman.

297. HONORS IN GOVERNMENT AND INTERNATIONAL RELATIONS.

Variable credit.
Modules 1-2, 3-4. Staff.

READINGS, RESEARCH AND THESIS COURSES

87. THE TUTORIAL PROGRAM.

Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

88. DIRECTED READINGS.

Variable credit.
Modules 1-2, 3-4. Staff.

89. SPECIAL PROJECTS.

Variable credit.
Modules 1-2, 3-4. Staff.

360. READINGS IN IUPP.

Variable credit.
Modules 1-2, 3-4. Staff.

361. THESIS IN IUPP.

Variable credit.
Modules 1-2, 3-4. Staff.

HISTORY

DEPARTMENT FACULTY

Robert F. Campbell, Ph.D., Professor of American History, Department Chairman
George A. Billias, Ph.D., Professor of American History

Daniel R. Borg, Ph.D., Associate Professor of European History*
Richard B. Ford, Ph.D., Associate Professor of African History
Ronald P. Formisano, Ph.D., Associate Professor of American History
Tamara K. Hareven, Ph.D., Associate Professor of American History
Paul Lucas, Ph.D., Associate Professor of European History
Jonathan K. Ocko, Ph.D., Assistant Professor of Asian History
Theodore H. Von Laue, Ph.D., Jacob and Frances Hiatt Professor of European History**

William A. Koelsch, Ph.D., Associate Professor of Geography and History in the Graduate School of Geography; Adjunct Associate Professor in the Department of History, and University Archivist.
Thomas C. Barrow, Ph.D., Affiliate Professor of American History
Marcus A. McCorison, M.S., Lecturer in American History, Director of the American Antiquarian Society

Professor Emeritus in Residence:
Dwight E. Lee, Ph.D., Jacob and Frances Hiatt Professor of European History, Emeritus

PART-TIME INSTRUCTORS

Ruth S. Arnon, Visiting Lecturer
Gilbert S. Doctorow, Visiting Lecturer
Baruch Mazor, Visiting Lecturer in Jewish History
Herbert Rosenblum, Visiting Lecturer in Jewish History
Lori T. Toepel, Visiting Assistant Professor in Ancient History

On leave of absence, 1974-75:
*Modules 1-2
**Modules 1-4

UNDERGRADUATE PROGRAM

Undergraduate Major: A student majoring in history takes 9 courses of history. Of the advanced (200 level) history courses in a major's program, at least two courses must be in American history an another two courses in non-American history. An additional three courses must be taken in Economics, Geography, Government, Psychology,or Sociology (as related fields), and, for distribution purposes, an additional 9 courses outside of these fields and of history.

The department recommends, though it does not require, that its undergraduate majors attain proficiency in at least one modern foreign language. Students planning to go on to graduate school are advised that demonstration of competence in one or more appropriate foreign languages is an important consideration in the admissions and fellowship award process of most leading universities. Students should also note that a knowledge of statistics and computer usage is highly desirable for advanced work in history.

Special Programs: Majors in history are encouraged to plan, in consultation with their advisors, a coherent program of study. Special attention should be paid to opportunities for interdisciplinary programs. Students should also explore advance opportunities under the new program being prepared for the Extended History Major in the projected University College. That program envisages interdisciplinary "tracks" of concentration in American, European, Russian, East Asian, and African history, with additional options for specialized interests within each of these tracks.

Whatever special program the student chooses to pursue, the Department recommends (but does not require) that he or she submit to the faculty advisor in writing a statement of the program's purpose together with a tentative list of courses.

Students may extend the scope of their undergraduate programs through the offerings of cooperating colleges in Worcester, by independent study and research, and in the honors program in history. Further information about these matters is available from the department chairman or other members of the department. See also the *Note* under COURSES below.

GRADUATE PROGRAM

The areas of graduate study at Clark are American history and modern European history, with select non-western history as supporting fields. Emphasis is placed on American history because of the Department's affiliation with the American Antiquarian Society, which provides graduate students with the facilities of one of the country's finest research libraries, with over 750,000 volumes and many valuable manuscripts relating to early American history down to 1876. A dozen smaller libraries in Worcester, with combined holdings of over a million volumes, further extend the resources of the Clark Library, as does easy access to Boston, Providence, and New Haven area research facilities.

The Department offers graduate work in the form of reading seminars (colloquia), research seminars, and individual tutorials for both reading and research purposes. First and second year students take three courses each semester (a semester equals two modules); one of these courses must be expressly devoted to research for the purpose of producing a substantial research paper. Beyond their research seminar, students fill out their program by taking colloquia, additional research seminars, and upper-division undergraduate courses. The chairman assigns incoming graduate students to faculty advisors, who help design their programs. With the permission of the advisor, a student is encouraged to take suitable courses in other Departments or Consortium colleges.

Master of Arts: The Department enrolls a limited number of terminal Master's candidates and awards the degree to students who have completed the work of six courses and a one-year residence requirement; have 1) either submitted two substantial research papers prepared in two seminars which are jointly equivalent to the Master's Thesis, or 2) submitted a Master's Thesis; and have passed the required oral examination.

Ph.D. candidates who have passed their preliminary examination whether or not they will continue with a dissertation, may also receive the degree of Master of Arts.

DOCTOR OF PHILOSOPHY

The traditional doctoral program is designed to enable students to master the discipline of history through research, reading and teaching. In addition to meeting the seminar and course requirements outlined above, a student who enters without an A.M. degree must spend at least three years in full-time residence at Clark, satisfy the language requirement, gain some experience in college teaching, pass the preliminary examination, and write a doctoral dissertation within seven years of matriculation.

Language Requirement: Students concentrating in American and British history must pass an examination in one foreign language: French, German, Spanish, or Russian. Those specializing in European history must pass examinations in two foreign languages, normally French and German. The chairman will designate an examiner in each language, who will determine whether the student is proficient enough to use the language as a research tool. An entering student must take a language examination as soon as it is offered in his first semester of residence, and must have passed this examination by the end of the first calendar year of residence in order to register for his second year. If required, the second language examination should be attempted early in the second year and must be completed before the student registers for his third year. All language requirements must be satisfied before the preliminary oral examination can be scheduled.

Teaching Experience: Some teaching experience at the college level is a prerequisite of the Ph.D. degree. Students normally meet this requirement in their second or third years as teaching assistants.

Fields: Soon after arriving at Clark, the student, in cooperation with his advisor, defines four fields and prepares for them in whatever ways seem appropriate in view of his background and interests. Students specializing in American history normally offer the full scope of American history as two fields. Those concentrating in non-American history normally offer one American field (the dividing line between the two American fields generally falls at 1815). Any student may offer a non-historical subject as a field, usually within the social sciences, or prepare a field in social science theory and research techniques.

Preliminary Examination: One of the four fields must be offered for oral examination at the end of the student's first year. Prior to taking the oral, the student must submit two research papers completed in his first year. The remaining three fields will be examined, again orally, at the beginning of the student's third year. The combined oral examinations constitute the "preliminary examination" required by the Graduate Board. Students who have passed their preliminary examinations may, upon request, receive the degree of Master of Arts.

Dissertation: Students are advised to consider and explore dissertation topics during their years of residence and to choose a possible dissertation advisor as soon as possible. The process of writing a dissertation is outlined in a brochure, "Dissertation S.O.P.," which may be obtained from the Department secretary.

Deadline for Completion: All work required for the doctor's degree must be completed within a seven-year period after matriculation. In unusual circumstances only, such as involuntary military service or extended illness, the department may grant a specified extension of time.

Note: The course offerings below do not include courses that may be taken through the Consortium of colleges in the Worcester area. The department recommends especially that students consider courses at Holy Cross in medieval, Renaissance and Reformation, and Latin American history.

Unless otherwise indicated, all course carry one course credit. The term colloquium indicates courses of limited enrollment that center on reading and discussion. The term proseminar indicates courses that are likewise limited and combine reading, discussion, and oral or written reports. Finally, the term seminar indicates courses of limited enrollment that are organized around a major research paper.

COURSES

NOTE: Undergraduate courses are of two types: 1) designed for freshmen and numbered in two digits, and 2) advanced courses numbered 200-299. The latter carry no prerequisites (unless especially noted) and are open to qualified freshmen without the consent of the instructor. In case of doubt, freshmen should consult their advisor and the instructor. The term "proseminar" indicates courses of limited enrollment which combine reading, discussion, and written reports or term papers.

COURSES FOR FRESHMEN

10. INTRODUCTION TO HISTORY.

Introduction to basic problems of historical method and explanation. Historical knowledge begins with self-knowledge in time as well as with thought about *how* we know and *what* we know. Students will compare causes of individual changes over time in identity and socialization (through autobiographies and family histories) with causes of historical change in larger social and political groups.
Full course, Modules 1-2. Mr. Ford & Formisano.

20. PRO-SEMINAR: ORIGINS OF CONTEMPORARY AMERICAN THEMES.

Readings and discussion dealing with the historical background and contemporary relevance of such political and social issues as the nature of the Presidency, race relations, violence and non-violence, environmental concerns and the government and economic life.
Full course, Modules 1-2. Mr. Campbell.

40. HISTORY OF EUROPE FROM THE "FALL" OF ROME TO THE PRESENT.

A lecture course intended to familiarize would-be majors in history, as well as non-majors, with the basic outlines of the development of Western society.
Full course, Module 5. Mr. Lucas.

80. TRADITIONAL AFRICA.

The development of several pre-European civilizations in Africa, including those of Kush, the Sudanic Kingdoms, the Zanj, Zimbabwe, and Nok-Ife-Benin. An anthropological approach will be used to explore traditional African society and values.
Full course, Modules 3-4. Mr. Ford.

81. MODERN AFRICA. Not offered, 1974-75

A study of the impact of Europe on Africa. Topics include the formal European penetration of Africa including slavery and the salve trade, exploration, missionary activities, imperialism, and eventually, independence. Three main themes will serve as organizing forces for the course: social change; economic change; political change.
Full course. Mr. Ford.

AMERICAN HISTORY - PERIOD COURSES

20. ORIGINS OF CONTEMPORARY AMERICAN THEMES.

(see courses for Freshmen) Mr. Campbell.

201. AMERICA'S FORMATIVE YEARS.

The basic institutions of American Civilization and the prevailing attitudes of the present were shaped in large measure during the colonial era. This course will deal with the foundations of such institutions as the family, church, and local community in America as well as the development of representative political institutions. There will also be an examination of American attitudes toward racism, religion, class distinctions, cultural ethnocentrism and imperial relations with the mother country during the same period. The aim of the course will be to analyze the reasons for two major tendencies that seemed to develop in the American colonies: the erosion of traditional European attitudes toward authority; and the emergence of a psychology of accomodation resulting from the pressures arising from the increasingly pluralistic character of the population.
Full course, Modules 3-4. Mr. Billias.

203. ERA OF THE AMERICAN REVOLUTION.

An analysis of American society in the pre-Revolutionary period with particular emphasis upon the ideological and political developments that led to the War of Independence.

Full course, Modules 1-2. Mr. Billias.

205. FORMATION OF THE NEW NATION.

An analysis of the American revolutionary experience, political theories in the making of the Federal Constitution, problems of the new government, and developments in the American political tradition through the Jeffersonian era.

Full course, Modules 3-4. Mr. Billias.

208.1. U.S. POLITICAL HISTORY 1828-1863.

An introduction dealing with the emergence of basic institutions, conflicts, and processes, which became characteristic of modern American politics. Emphasis on political parties, voting, social movements, ideology.

Half course, Module 3. Mr. Formisano.

208.2. U.S. POLITICAL HISTORY 1863-1896.

A continuation of History 208.1.

Half course, Module 4. Mr. Formisano.

210. HISTORICAL METHOD AND CIVIL WAR.

Not offered, 1974-75.

With special reference to the American Civil War as a case study, the course introduces students to the nature of history, problems of objectivity/subjectivity, causation, and research design. The first part of the course is general; while ranging broadly over problems of interpretation, it develops the thesis that history is a social science. The remainder of the course analyzes in detail events from 1820-1861. Broader comparisons with the Peloponnesian Wars, the Vietnamese Civil War, and others, are briefly considered.

Full course. Mr. Formisano.

216. PROSEMINAR: THE PROGRESSIVE ERA.

Not offered, 1974-75.

Full course. Mr. Campbell.

218. THE U.S. IN THE 20TH CENTURY.

The American experience since about 1900 with emphasis upon the role of government in economic life and the emergence of the United States as a world power.

Full course, Module 5. Mr. Campbell.

TOPICAL COURSES

220. THE AMERICAN CITY.

Major themes in the social and cultural development of American cities with focus on the process of urbanization and changing social structure. This course will be taught jointly with Urban Sociology (Soc. 247a) and students can receive either History or Sociology credit.

Full course, Module 2. Ms. Hareven,
Mr. Ross.

222. AMERICAN CONSTITUTIONAL HISTORY.

The origins and development of the American constitutional system with special reference to the role of the Supreme Court.

Full course, Modules 1-2. Mr. Campbell.

223.PROSEMINAR: AMERICAN LEGAL HISTORY.

Not offered, 1974-75.

Full course. Mr. Campbell.

224. AMERICAN ECONOMIC HISTORY.

Not offered, 1974-75.

Full course. Mr. Campbell.

226. AMERICAN THOUGHT AND CULTURE, 1740-1865.

Studies in the consciousness of selected Americans under differing conditions of time, place, and circumstances. Emphasis on the reading and analysis of primary texts. Field and laboratory exposure to music, art, architecture, and landscape analysis.

Full course, Modules 1-2. Mr. Koelsch

228. AMERICAN THOUGHT AND CULTURE, SINCE 1865.

Main currents in American intellectual history since the Civil War with emphasis upon social and political thought.
Full course, Modules 3-4. Mr. Campbell.

231. PROSEMINAR: CONTEMPORARY AMERICAN JEWISH COMMUNITY.

An historical and sociological survey, this course examines the broad spectrum of dynamic factors that are operative today in the American Jewish community. Movements, ideologies, institutions, philanthropy, the cultural apparatus, international concerns, identity issues, and social pressures are among the many areas to be explored intensively.
Full course, Modules 1-2. Mr. Rosenblum.

232. THE BLACK EXPERIENCE IN AMERICAN HISTORY.

Not offered, 1974-75.
Full course.

234. RIGHT WING MOVEMENTS, 1790-1970.

Wallace, McCarthyism, American fascism, Social Justice, Red Scare, A.P.A., Know Nothings, Antimasons, Anti-Illuminating, and other movements. (By permission of professor).
Full course, Modules 3-4. Mr. Formisano.

236. PROSEMINAR: THE FAMILY IN HISTORICAL PERSPECTIVE.

This is an intensive undergraduate and graduate research seminar funded by the Rockefeller Foundation. Limited by permission of instructor only.
Variable credit (one to four full courses).
Modules 3-4. Ms. Hareven.

238. HISTORICAL GEOGRAPHY OF THE EASTERN UNITED STATES.

Economic and cultural geography from earliest settlement to about 1914, with emphasis on 19th century developments. Cross listed with Geography.
Full course, Modules 3-4. Mr. Koelsch,
Mr. Peet.

EUROPEAN HIISTORY — PERIOD COURSES

40. EUROPEAN HISTORY FROM THE FALL OF ROME TO THE PRESENT.

(see courses for freshmen) Mr. Lucas.

241. ANCIENT CITY STATE.

Not offered, 1974-75.

A comparative study of the social, political, economic and cultural institutions of the ancient Greek and Roman city-state: the duties and privileges of citizenship; empire building and urban development; political theory and practice; death of the ideal through war and revolution. Readings will include both ancient and modern authors.
Full course. Ms. Toepel.

242. ANCIENT WORLD-STATE.

Not offered, 1974-75.

A comparative study of the social, political, economic and cultural institutions of the Greek and Roman world-states created by Alexander the Great and Augustus; the effect of the clash between the Hellenistic kingdoms and Rome; kingship in theory and practice; the management of empire and urbanism; the collapse of the world-states. Readings will include both ancient and modern authors.
Full course. Ms. Toepel.

243. THE IDEA OF HISTORY IN THE ANCIENT WORLD.

Not offered, 1974-75.

A study of the literary sources for the ancient civilizations of Egypt, the Middle East, Greece and Rome.
Full course. Ms. Toepel.

See 293 below, RENAISSANCE AND REFORMATION

245. ENGLAND'S "OLD REGIME".

Not offered, 1974-75.

The structure and possible causes of the peculiarities of English state and society compared with continental Europe's from the Middle Ages to about 1800.
Full course. Mr. Lucas.

246. "OLD EUROPE" AND THE ANCIEN REGIME, 1550-1789.

An examination of pre-French Revolutionary Europe as a corporative and customary political culture; a study of how that culture was altered by absolutism, militarism, mercantilism, early capitalism, modern science, and the requirements of the international system of European states; and appreciation of the social and ideological legacies of the *ancien regime*.

Full course, Modules 3-4. Mr. Doctorow.

247. THE FRENCH REVOLUTION 1789 AND THE COMPARATIVE STUDY OF REVOLUTIONS.

Not offered, 1974-75.

An analysis of old and new ideas of revolution, including ritual, resistance, reactionary restoration vs. innovation; of the "democratic" revolution; of the psychology, sociology, and social psychology of revolutionary behavior; and of the relevance of the French Revolution to 20th century issues.

Full course. Mr. Lucas.

248. 18TH CENTURY EUROPEAN INTELLECTUAL HISTORY.

The "Enlightenment" and its critics: the scientific revolution, philosophical reformism, and early conservative romanticism. The emphasis is upon rival perceptions of man's psychological and social nature, history, and aesthetic and religious sensibilities as seen through great *secondary* treatments of the Enlightenment (which also introduces the student to various ways of doing intellectual history) and original sources: Hume, Beccaria, Rousseau, Condorcet, Kant, Burke, Savigny.

Full course, Module 2. Mr. Lucas.

249.1. 19TH CENTURY EUROPEAN INTELLECTUAL HISTORY.

The elaboration of the "Enlightenment" by its heirs and critics. The emphasis is the same as in 248, but the focus shifts to an analysis of political and economic liberalism, Social Darwinism, racism, and "utopian" socialism in England and France.

Half course, Module 3. Mr. Lucas.

249.2. 19TH CENTURY EUROPEAN INTELLECTUAL HISTORY.

Same as 248, except the focus shifts to an analysis of nationalisms, Marxism, positivism, old and new conservatisms, and the reassessment of the values and progress of European civilization among principally Italian and German thinkers.

Half course, Module 4. Mr. Lucas.

250. RUSSIA TO 1825.

A survey of the rise of the Russian Empire, with particular emphasis on the 17th and 18th centuries.

Full course, Modules 3-4. Mr. Doctorow.

251. IMPERIAL RUSSIA, 1825-1917.

Not offered, 1974-75.

An outline of Russian development from the early nineteenth century to the collapse of the tsarist regime. The emphasis lies on political history with occasional exploration of literary and economic history as well.

Full course. Mr. Von Laue.

252. NINETEENTH CENTURY EUROPE.

Not offered, 1974-75.

Lecture and discussion course centering around the problems and dilemmas of various European political societies as they responded to the tug of modernity during the century of European preeminence throughout the world.

Full course. Mr. Borg.

253. TWENTIETH CENTURY EUROPE.

Lecture and discussion course concentrating on the characteristic problems of Europe in a half century of war, economic convulsion, and political instability.

Full course, Modules 3-4. Mr. Borg.

254. PRO-SEMINAR: WORLD WAR I AND EUROPE.

Not offered, 1974-75.

Full course. Mr. Borg.

See also 292, BRITISH MASS CULTURE, 1870-1974

255. MODERN GERMANY.

Not offered, 1974-75.

An examination of the convulsive course of German history over the past century.

Full course. Mr. Borg.

256. REVOLUTIONARY RUSSIA, 1900-1953.

Not offered, 1974-75.

The course offers a survey of Soviet political history from the beginning of Bolshevism to the death of Stalin; it is the continuation of the course on Imperial Russia, 1825-1917. Students may take either half of the course for half credit, the first half to cover the history of the Russian revolution, 1900-1920, the second the era of Stalin, 1920-1953. This course will be taught in two consecutive modules. See 291, below.

Full course. Mr. Von Laue.

257. SOVIET RUSSIA SINCE THE DEATH OF STALIN.

Not offered, 1974-75.

Full course. Mr. Von Laue.

TOPICAL COURSES

247. THE FRENCH REVOLUTION AND THE COMPARATIVE STUDY OF REVOLUTIONS.

See description under *European History-Period Courses.*

Mr. Lucas.

248. 18TH CENTURY EUROPEAN INTELLECTUAL HISTORY.

See description under *European History-Period Courses.*

Mr. Lucas.

249.1. 19TH CENTURY EUROPEAN INTELLECTUAL HISTORY.

See description under *European History-Period Courses.*

Mr. Lucas.

249.2. 19TH CENTURY EUROPEAN INTELLECTUAL HISTORY.

See description under *European History-Period Courses.*

Mr. Lucas.

258. PROSEMINAR: EUROPEAN INTELLECTUAL HISTORY.

Not offered, 1974-75.

A research seminar on authors not read in History 248 or 249. Prerequisite: successful completion of History 248 or 249 or its equivalent, elsewhere and permission of the instructor.

Full course. Mr. Lucas.

See also 292 below: BRITISH MASS CULTURE 1870-1974.

259. PROSEMINAR: TOTALITARIANISM.

A study of the nature of totalitarianism and of the origins, ideology, and operation of the German Nazi and Russian Soviet regimes.

Full course, Modules 3-4. Mr. Borg.

260. THE NAZIS AND THE JEWS: THE HOLOCAUST UNIVERSE.

Not offered, 1974-75.

This course will investigate the origins, development, operational features and fateful consequences of this most traumatic event in all human history. It will draw upon the abundance of historical, biographical, literary and philosophical sources that have become increasingly available in recent years.

Full course. Mr. Rosenblum.

NON-WESTERN HISTORY COURSES

264. JEWS AND ARABS THROUGHOUT HISTORY.

A survey course on the relations between Jews and Arabs beginning with their earliest contact. Discussing the influence of Judaism on the formation of the early Islam, as well as Islamnic influences on later Jewish thought. The varied aspects of the Judeo-Islamic symbiosis will be analyzed. Readings from Jewish and Islamic Literature will be in English translation.

Full course, Modules 3-4. Mr. Mazor.

A. FAR-EAST

270.1. CHINA TO 1644: INTELLECTUAL FOUNDATIONS OF PRE-MODERN CHINA.

The course will focus first on the evolution of early Chinese cosmology. On the basis of this there will then be a thematic analysis of classical and developed Confucianism and Taoism, and of the impact of Buddhist penetration into China. The course will deal with the period from antiquity to the 16th century A.D. There will be voluntary discussion groups.

Half course, Module 1. Mr. Ocko.

270.2. CHINA TO 1644: PROBLEMS IN POLITICAL AND SOCIAL HISTORY.

A survey of basic themes in the development of Imperial China: the sino-barbarian frontier, social mobility, development of bureaucracy, art and literature, the growth of cities. History 270 is a suggested prerequisite.There will be voluntary discussion groups.

Half course, Module 2. Mr. Ocko.

271. CHINA, 1644 TO THE PRESENT.

A thematic discussion of the last imperial dynasty, its breakdown, the search for and establishment of new order. Films and at least one simulation game will be an integral part of the course. This is an indivisible two module course for which History 270a and History 270b are suggested as prerequisites.

Full course, Modules 3-4. Mr. Ocko.

272. PROSEMINAR: CH'ING SOCIETY.

Not offered, 1974-75.

(Survey course a suggested prerequisite.) An interdisciplinary topical survey of the Ch'ing dynasty at its height: the emperor as man and institution; literature and the arts; the individual and the state; the seeds of destruction.

Full course. Mr. Ocko.

273.1. CHINA IN REVOLUTION: INTERPRETIVE LECTURES.

An analysis of the major themes and historical controversies of twentieth century Chinese history. Previous work in Chinese history is required. (By permission of Professor).

Half course, Module 1. Mr. Ocko.

273.2. CHINA IN REVOLUTION: CULTURAL REVOLUTION IN 20TH CENTURY CHINA.

Proseminar. From among the broader topics of family, literature, and education, students will select topics for papers. Weekly meetings will focus on key articles applicable to the entire group and problems of research and interpretation. History 273a is a prerequisite. (By permission of Professor).

Half course, Module 2. Mr. Ocko.

274. MODERN JAPAN, 1600-1940.

A survey focusing on the growth of Japan behind the closed door, the political revolution of Meiji, Japan's pan-Asianism and increasing role as impetus for revolution in China, and power in East Asia. Comparisons will be made with contemporary China. There will be voluntary discussion groups.

Full course, Modules 3-4. Mr. Ocko.

275. ASIAN RADICALS.

A comparative study of radical leaders such as Mao, Ho Chi-minh, Gandhi, Sukarno, and Japanese militarists. The course will focus on motivation, intellectual and ideological underpinnings, and techniques-especially of motivation; and an effort will be made throughout to apply western world social sciences to assess the efficacy of cross-cultural comparison. Some Asian history strongly suggested. (By permission of Professor.)

Full course, Module 4. Mr. Ocko.

278. SPECIAL TOPICS: AMERICA EAST ASIAN RELATIONS.

Not offered, 1974-75.

Full course. Mr. Ocko.

B. AFRICA

80. TRADITIONAL AFRICA.

(See courses for freshmen)

Full course, Modules 3-4. Mr. Ford.

81. MODERN AFRICA.

(See courses for freshmen) Not offered, 1974-75.

Full course. Mr. Ford.

280. BLACK AND WHITE IN GHANA.

Not offered, 1974-75.

The interaction of African and European cultures on the Gold Coast and in modern Ghana.

Full course. Mr. Von Laue.

281. PROSEMINAR: GHANA, THE NKRUMAH YEARS.

Not offered, 1974-75.

Full course. Mr. Von Laue.

285. URBANIZATION IN AFRICA: 1000 TO PRESENT.

An investigation of urban growth in Africa. Beginning with the cities of the Sudan and the Zanj, the course will consider the growth of urban centers. Comparisons will be made in two areas: between the old trading cities and the modern commercial-administrative cities; between urban growth in Africa and urban developments in other parts of the world.

Full course, Module 3. Mr. Ford.

286. EUROPEANS IN AFRICA: EXPLOITATION OR SOCIAL CHANGE.

An examination of the role of Europeans in the African setting. Humanitarian, economic, educational, and development motives will be weighed against the performance of Europeans. The course will also consider the post-independence period to determine the nature of continuing European influences in Africa.

Full course, Module 4. Mr. Ford.

C. RUSSIA

(See courses listed under European History.)

TOPICAL COURSES IN NON-WESTERN HISTORY

288. DEVELOPMENT PROBLEMS.

The several dimensions of development and the reasons why the gap between developed and underdeveloped countries is widening will be explored. Among the disciplines drawn upon will be: Geography, Government, Economics and Education. Problems analyzed will include - urban growth, land reform, unemployment and government planning. Tanzania, China, Brazil and other countries will be used as cases. (Listed also as Geography 125)

Full course, Modules 1-2. Mr. Ford and Mr. Berry.

289. PROSEMINAR: COMPARATIVE WESTERNIZATION.

Not offered, 1974-75.

The seminar discussions will explore the diverse effects of western influence on Russia, China, and West Africa (Ghana), while at the same time evolving a pattern for meaningful comparison of modernization in these three polities.

Full course, Modules 1-2. Mr. Von Lue.

Jewish History

231. PROSEMINAR: CONTEMPORARY AMERICAN JEWISH COMMUNITY.

An historical and sociological survey, this course examines the broad spectrum of dynamic factors that are operative today in the American Jewish community. Movements, ideologies, institutions, philanthropy, the cultural apparatus, international concerns, identity issues, and social pressures are among the many areas to be explored intensively.

Full course, Modules 1-2. Mr. Rosenblum.

260. THE NAZIS AND THE JEWS: THE HOLOCAUST UNIVERSE.

Not offered, 1974-75.

This course will investigate the origins, development, operational features and fateful consequences of this most traumatic event in all human history. It will draw upon the abundance of historical, biographical, literary and philosophical sources that have become increasingly available in recent years.

Full course. Mr. Rosenblum.

264. JEWS AND ARABS THROUGHOUT HISTORY.

A survey course on the relations between Jews and Arabs beginning with their earliest contact. Discussing the influence of

Judaism on the formation of the early Islam, as well as Islamnic influences on later Jewish thought. The varied aspects of the Judeo-Islamic symbiosis will be analyzed. Readings from Jewish and Islamic Literature will be in English translation.
Full course, Modules 3-4. Mr. Mazor.

GENERAL HISTORY COURSES

290. CURRICULUM DEVELOPMENT AND ANALYSIS IN HISTORY AND GEOGRAPHY.

A consideration of the assumptions about learning, teaching, and knowledge which are incorporated in the full range of curriculum materials presently available for teaching geography and history. Each student will prepare a curriculum plan suitable to individual educational objectives for teaching history or geography. The course is required of all students in the history-geography TEACHING CLUSTER.
Full course, Modules 1-2. Mr. Ford, Mr. Knos, Mr. Schwartz.

291. SOVIET RUSSIA 1917-1960.

Readings, discussions and informal lectures on Soviet History with special attention to the following topics: the Bolsheviks and the Revolution of 1917; the Civil War and the consolidation of soviet rule; ENP Politics and Society; the problems of industrialization; the Purges; the Great Patriotic War; the origins of the cold war; and de-Stalinization.
Full course, Modules 1-2. Mr. Doctorow.

292. BRITISH MASS CULTURE, 1870-1974.

The impact of the welfare state, war, empire, new modes of communication, and education. Sources to include popular and documentary films, newspapers and fiction, ads, postage stamps, cartoons, food, folk songs, children's books, hymns, and the music of the Beatles.
Full course, Module 1. Ms. Arnon.

293. THE RENAISSANCE-REFORMATION PERIOD FROM A PSYCHO-SOCIOLOGICAL PERSPECTIVE.

Topics will include psychoanalytic studies of Leonardo da Vinci, Luther, and Loyola; Neoplatonic astrology and hermetic mysticism; the dominion of Europeans over non-European peoples; the changing status of women and children; and radical religious phenomena such as apocalyptic sects, Puritanism, and the Inquisition.
Full course, Module 2. Ms. Arnon.

295. THE FUTURE, WAYS OF KNOWING AND SURVIVAL.

Not offered, 1974-75.

A lecture and discussion course. Instructors (a historian and a geographer) alternate as lectures; they will comment on each other's presentations and ideas, leading into class discussion. Students will write a variety of short papers and exercises, and keep a journal of their changing reactions to the course and the subject. Instructors and students will review the possibilities and limitations of "future study", practice trend projections, systems simulation, scenario preparation, visioning, and hopefully prepare a more positive and rational attitude toward the future. An upper division course; no prerequisites. Listed jointly with Geography.
Full course. Mr. Von Laue, Mr. Kates.

297. SPECIAL PROJECTS.

Undergraduates, normally juniors and seniors, may construct an independent research course with an instructor of their choosing. The consent of the instructor must be obtained in advance.
Variable credit.
Modules 1-2-3-4-5. Staff.

298. DIRECTED READINGS.

Undergraduates, normally juniors and seniors, may design a directed readings course to consist of a sequence of structured readings on a given topic to be approved and directly supervised by an instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

299. JUNIOR HONORS SEMINAR.

This course attempts to teach students how to write analytical and synthetic research papers and to write them well as well as to introduce students to the problems of studying history by learning about the aspirations, advantages, and disadvantages of "historicism".
Full course, Modules 3-4. Mr. Borg, Mr. Lucas.

GRADUATE COURSES

300. DEPARTMENTAL SEMINAR.

Not offered, 1974-75.

A survey of some major schools of historical study and of their methods, in search of a suitable historical approach to the contemporary scene.

Full course. Staff.

AMERICAN HISTORY

301. COLLOQUIUM, THE LITERATURE OF AMERICAN HISTORY TO 1815.

This seminar takes a historiographical approach to the literature in American history from the beginning of the colonial period until the end of America's second War of Independence.

Full course, Modules 1-2. Mr. Billias.

302. COLLOQUIUM, THE LITERATURE OF AMERICAN HISTORY SINCE 1815.

Major topics and themes, emphasis on historiographical essays.

Full course, Modules 3-4. Mr. Formisano.

310. STUDIES IN 18TH CENTURY AMERICAN HISTORY.

Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Billias.

311. TRANSFORMATION OF AMERICAN POLITICAL CULTURE 1750-1850.

An interdisciplinary course focusing on the social, political, ideological, and institutional changes leading the formation of modern political parties. Theory, concepts and methods stressed.

Full course, Modules 1-2. Mr. Billias, Mr. Formisano.

312. RISE OF POLITICAL PARTIES IN THE EARLY AMERICAN REPUBLIC.

Not offered, 1974-75.

This seminar deals with the origins of American political parties, the debate regarding the early party system, and a study of the process of nation building.

Full course. Mr. Billias.

315. SEMINAR: AMERICAN POLITICAL HISTORY.

Not offered, 1974-75.

U.S. Political History: Methods and Topics. Concentration on topics selected by professor and students, with special attention to interdisciplinary methods and the most recent works in political history.

Full course. Mr. Formisano.

320. SEMINAR: U.S. SOCIAL HISTORY.

The impact of urbanization and industrialization of the family.

Full course, Modules 3-4. Ms. Hareven.

321. STUDIES IN RECENT AMERICAN HISTORY.

Not offered, 1974-75.

Independent studies.
Variable credit.
Modules 1-2-3-4-5. Ms. Hareven.

322. SEMINAR: AMERICAN URBAN HISTORY.

Not offered, 1974-75.

The focus falls on the American adjustment to the urban, industrial experience. Research will utilize original sources in Worcester and other New England towns.

Full course. Ms. Hareven.

325. STUDIES IN RECENT AMERICAN HISTORY.

Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Campbell.

330. STUDIES IN AMERICAN THOUGHT AND CULTURE.
Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Koelsch.

335. STUDIES IN AMERICAN INTELLECTUAL HISTORY.
Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Beck.
(See Department of Philosophy)

EUROPEAN AND NON-WESTERN HISTORY

345. STUDIES IN EARLY MODERN EUROPEAN HISTORY.
Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Borg, Mr. Lucas.

350. STUDIES IN MODERN EUROPEAN HISTORY.
Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Borg, Mr. Von Laue.

355. STUDIES IN RUSSIAN HISTORY.
Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Von Laue.

370. STUDIES IN CHINESE HISTORY.
Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Ocko.

380. STUDIES IN AFRICAN HISTORY.
Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Ford, Mr. Von Laue

399. GRADUATE READINGS COURSE.
Variable credit.
Modules 1-2-3-4-5. Staff.

400. THESIS RESEARCH.
Variable credit.
Modules 1-2-3-4-5. Staff

JEWISH STUDIES

The following courses relating to Jewish studies are offered in the 1974-75 academic year in various departments or as in interdepartmental discipline. For description and details please check the course listings within the departments.

Dr. Zeev Raviv, Coordinator.

Department of Foreign Languages and Literatures

Hebrew 11. HEBREW BEGINNERS.
Ms. Raviv.

Hebrew 12. HEBREW INTERMEDIATE.
Ms. Raviv.

Hebrew 119. HEBREW SCRIPTURES - PENTATEUCHAL AND HISTORICAL BOOKS.
Rabbi Klein.

Hebrew 121. WISDOM LITERATURE OF THE BIBLE (PSALMS AND PROVERBS).
Mr. Kushner.

Hebrew 122. WHEN GOOD PEOPLE SUFFER (THE BOOK OF JOB).
Mr. Kushner.

Hebrew 130. HEBREW ADVANCED: LANGUAGES-LITERATURE.
Mr. Raviv.

Hebrew 140. JEWISH MYSTICISM.
Mr. Kaufman.

Hebrew 175. THE LITERATURE OF MODERN ISRAEL.
Mr. Raviv.

Yiddish 10. INTRODUCTORY YIDDISH.
Rabbi Gordon.

Geography Department

Geography 288. ISRAEL'S CHANGING GEOGRAPHICAL LANDSCAPES.
Mr. Cohen.

History Department

History 231. CONTEMPORARY AMERICAN JEWISH COMMUNITY.
Mr. Rosenblum.

History 263. MODERN JEWISH SOCIAL AND INTELLECTUAL HISTORY: 1870-PRESENT.
Ms. Albert.

History 264. JEWS AND ARABS THROUGHOUT HISTORY.
Mr. Mazor.

History 229. CULTURAL HISTORY OF THE AMERICAN JEWS: THE LITERARY PHASE, 1912.
(also listed as Hebrew 150.)

Department of Theatre Art

Theatre Art 184. THE GOLDEN AGE OF YIDDISH THEATRE.
Refer to description under Theatre Art. Mr. Raviv.

LINGUISTICS

114. GENERAL PHONETICS AND PHONEMICS.
Phonetics is the scientific study of all the physical aspects of speech. Phonemics treats of the systematic nature of the use of the physical means to form the communication systems we call languages. This course is concerned with language in general, so as to provide the theoretical framework necessary for describing the pronunciation system of any language. It includes the fundamentals of articulatory and acoustic phonetics, and it proceeds to general structural phonemics and some of its modifications and the theoretical questions raised by them. Prerequisite: consent of the instructor.

This course, or its equivalent, is prerequisite to certain others, among which are Spanish 248 (Spanish Phonology), Romance Languages 258 (History of the Romance Languages), and Linguistics/Education 260 (Linguistics and Language Learning). The instructor is prepared to suggest alternative ways of meeting the prerequisite, however. Given in alternate years.
Half course, Module 1. Mr. Reid.

115. MAN AND LANGUAGE.

Not offered, 1974-75.

An introduction to the analysis of the nature and function of human language and its role in the life of individuals and societies. The approach is interdisciplinary with attention to the points of view of philology, contemporary linguistics, anthropology, psychology, and philosophy. The lectures focus on such questions as: What is language? What is the relation between language and thought? To what extent does our language determine how we perceive the world? Why and how do languages change? What other functions does language serve besides communication? Why do we not have a world language? How have linguists achieved an objective, scientific analysis of linguistic systems? What are the limitations of such a science?

The course is designed for the general student who wishes to know more about the nature of the uniquely and universally human institution of language, and for the student or teacher of English or foreign language who is interested in the light which linguistic science can throw upon the relations between his field and other areas of life and knowledge.

The first two modules of this course are devoted to lectures, and the second two modules, to a seminar in which members of the group report in depth on problems of their choosing. Offered in alternate years. Prerequisite: consent of the instructor.

Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Reid.

260. LINGUISTICS AND LANGUAGE LEARNING.

(Also designated Education 260)

An exploration of various fields of linguistic study from the point of view of their relevance to foreign language learning. Intended to meet the needs of two classes of students: (1) prospective foreign language teachers who already have advanced mastery of their foreign language and (2) other students with a more general interest in the nature of language, whose primary orientation may be toward related problems in, for example, psycholinguistics or sociolinguistics.

Approaching language as *behavior* and as *system*, the course directs attention to the levels ranging from the culture system to the system of the language as a whole, and finally to its subsystems: lexical, grammatical, and phonological.

Offered in alternate years. Prerequisite: Linguistics 114, which may be taken either prior to or concurrently with this course, and for which substitutes may be available if the instructor is consulted well in advance; consent of the instructor is required. Given in alternate years. Mr. Reid.

285. SEMANTICS.

This course studies meaning. It deals with and classifies the changes in the meanings of words and phrases, and it analyses simile and metaphor. It also deals with the parametric organization of the semantic system. Some attention is paid to the relation between thought and language. Offered at the discretion of the English Department. Prerequisite: consent of the instructor.

Full course, Modules 3-4. Mr. Macris.

287. INTRODUCTION TO LINGUISTICS.

This course is devoted to the theory and methodology of descriptive linguistics. It deals with the nature and function of language, the relation between speech and writing, phonology, morphology, syntax, lexicology, the sociocultural setting of language, the contact of linguistic systems, and the problems of "correctness." Emphasis is placed upon the dynamics of systems analysis. Offered at the discretion of the English Department. Prerequisite: consent of the instructor.

Full course, Modules 1-2. Mr. Macris.

288. COMPARATIVE AND HISTORICAL LINGUISTICS.

This course examines the theory and methodology of comparative and historical linguistics. It focuses on linguistic geography, linguistic borrowing, the causes of linguistic change, the comparative method and reconstruction, and problems in analyzing languages with and without a literary tradition. Emphasis is placed upon the dynamics of systems analysis. Offered at the discretion of the English Department. Prerequisite: consent of the instructor.

Full course, Modules 3-4. Mr. Macris.

Education 288. SOCIOLINGUISTICS.

Refer to description under Education.

Ms. Guskin.

Education 336.1. LANGUAGE AND COGNITIVE DEVELOPMENT.

Refer to description under Education.

Ms. Guskin.

Education 336.2. BILINGUAL EDUCATION.

Refer to description under Education.

Ms. Guskin.

English 280. HISTORY OF THE ENGLISH LANGUAGE.
Refer to description under English.
Mr. Macris.

English 281. INTRODUCTION TO OLD NORSE.
Refer to description under English.
Mr. Anderson.

English 282. SEMINAR: OLD ENGLISH.
Not offered, 1974-75.
Refer to description under English.
Mr. Macris.

English 284. SEMINAR: MODERN AMERICAN ENGLISH.
Refer to description under English.
Mr. Macris.

English 286. SEMINAR: LINGUISTIC APPROACHES TO LITERATURE.
Not offered, 1974-75.
Refer to description under English.
Mr. Macris.

English 295. TEACHING ENGLISH AS A SECOND LANGUAGE. Not offered, 1974-75.
Refer to description under English.
Mr. Macris.

Philosophy 185. PHILOSOPHY OF LANGUAGE.
Refer to description under Philosophy.
Staff.

Psychology 232. PSYCHOLOGY OF LANGUAGE. Not offered, 1974-75.
Refer to description under Psychology.
Mr. Kaplan.

Romance Languages 258. HISTORY OF THE ROMANCE LANGUAGES.
Not offered, 1974-75.
Refer to description under Foreign Languages and Literatures.
Mr. Reid.

Spanish 248. SPANISH PHONOLOGY.
Refer to description under Foreign Languages and Literatures.
Mr. Reid.

MANAGEMENT

DEPARTMENT FACULTY

George A. Balko, Jr., M.B.A.
Robert W. Burmeister, Ph.D.
Daniel R. Kilty, Ph.D.
Harold T. Moody, Ph.D.
Lawrence W. Murray, Jr., Ph.D.
Robert W. Scull, Ph.D.
George J. Osipov, B.S.

THE PROGRAM

The Department limits itself to a graduate program leading to the M.B.A. degree. The program is small and extremely flexible, designed to allow the participation of students interested in a wide range of organizations, both profit and non-profit.

The program has unique features which should be evaluated by the prospective student in the light of his interests and preferences. First, only the most important topics in the study of management are included: marketing, capital investment analysis, information systems, behavioral science, and organizational change. These topics are applied to a wide variety or organizations. Second, to complete the graduate program, the student must create a part of his program in conjunction with the faculty, administration, and other students. The Department regularly schedules courses and seminars only in the above five fields. Thus, workshops, special courses and other forms of educational projects must be continually created by the students. Experts from both academic and practicing backgrounds are brought into the program temporarily to meet the changing demands. Third, the Department is not solely committed to the study of business organizations. The faculty believes the study of management applies to all organizations, non-profit as well as profit. Consequently, the theoretical core of each field of study is emphasized, and descriptive institutional material is used to particularize the core. The mix of students in the program, including current and future managers of educational, health, religious, government and business organizations, forces the faculty to focus on the universal principles of managing. Fourth, all departmental courses and seminars are scheduled in the late afternoons and evenings. These hours do not mean it is an evening program for part-time students, with a separate program in the daytime for full-time students. It is one program, with both part and full-time students attending the same courses, seminars and special projects. This aspect of the program contributes a unique atmosphere in which students learn from each other's wealth of different practical and academic experience.

A graduate program of 10 full courses (10 credits) is required, which can be completed in one academic year. Prior to graduate study, a basic knowledge in 9 subject areas must be demonstrated. These prerequisites are not waived on the basis of previous academic or other experiences because of the great variability in coursework and memory span of students. Although inconvenient for some, the required demonstration of knowledge results in a better graduate education for all. While individual study and the taking of waiver examinations is urged, the Department offers the subjects as half-semester courses for those who would prefer them.

ADMISSION TO THE PROGRAM

All undergraduate majors are given equal weight in the admission decision. Persons interested in the program should request a Bulletin from the Department. Those wishing to apply should complete the accompanying application form and return to the Department with the application fee. When all supporting documents have been received, the application is considered by the admissions committee, which meets monthly through the academic year. Admission is for September or February.

MATHEMATICS

DEPARTMENT FACULTY

Sidney C. Garrison, Ph.D., Assistant Professor of Mathematics
John F. Kennison, Ph.D., Professor of Mathematics
Norman Sondak, Dr. of Eng's., Professor (Affiliate) of Mathematics
Robert W. Kilmoyer, Jr., Ph.D., Associate Professor of Mathematics, Department Chairman
Herb Silverman, Ph.D., Associate Professor of Mathematics*
Bhama Srinivasan, Ph.D., Associate Professor of Mathematics
John S. Stubbe, Ph.D., Associate Professor of Mathematics
Stanley J. Poreda, Jr., Ph.D., Assistant Professor of Mathematics
David E. Tepper, Ph.D., Assistant Professor of Mathematics

*On leave of absence, 1974-75.

UNDERGRADUATE PROGRAM

A. In General:

Students who wish to gain a general understanding of mathematics as a language in which ideas from many disciplines are being expressed may take Mathematics 1 , The Art of Mathematical Expression.

A variety of elementary mathematical needs can be met by means of the Math Clinic and Tutorial, Math 10. Students work at their own pace and choose a program suited to their needs. This course is also well-adapted to the scheduling of the modular calendar since Math 10 can be taken as a single or double strength course in any of the first four modules.

Math 11 is specifically a preparation of calculus and may be taken independently of Math 10.

The Calculus courses (Math 12, 15, 16) are all normally open to freshmen (but students with a weak background are advised to take Math 11 or Math 10 first—diagnostic tests are available for students who are uncertain about which course to take. Math 12 is the standard first year calculus course while Math 16 is the honors calculus. Math 15 relates Calculus to Probability Theory and provides technical tools applicable to the Life and Social Sciences. The calculus courses are sectioned and tend to be relatively small. Students may start Math 12 in either the Fall or the Spring.

A Calculus course is strongly advised for students in the sciences and all students seriously interested in mathematics. Students who have special mathematical needs might consider Math 117 a comprehensive Probability and Statistics course or Math 118, Fortran for Science Students. Other needs can be met informally or by means of Math 88, 89 and 200 after consultation with the department.

A student may receive up to 2 full courses total for Math 10 and 11 combined.

B. The Math Major:

The prospective major is urged to visit the department and fully discuss different approaches to the major (e.g. pure mathematics, applied mathematics, mathematics education or computing science). Requirements for new programs in these areas can be obtained from the department. The prospective major should also note the mathematics specialization in the

Technology and Man program. In addition to courses at Clark, some of these programs can be enriched by choosing appropriate courses within the Worcester Consortium of Colleges.

The current requirements for the major are:

(1.) Ten full courses in mathematics at or beyond the level of Math 12. (Up to four full courses in computer science beyond 101 may be substituted.) At least two full courses on the 200-level (or the equivalent—see below) must be included. Math 13 and 113 should normally be taken in the sophomore year.

(11.) Three full courses from one of the following areas: biology, chemistry, computer science, economics, geography, geology, philosophy, physics, psychology, sociology.

(111.) At least 9 courses from other than Group A courses and certain courses in computer science, economics, geography and psychology which depend heavily on mathematics. In each case please consult with the department.

The purpose of the 200-level requirement is to insure that a major's program has depth or emphasis. For students interested in math education this requirement can be met by taking the education module and the math education course (Math 150). For students taking other similar courses through the Consortium, please consult with the department to see if the 200-level requirement is met.

GRADUATE PROGRAM

The department offers courses leading to the degrees of Master of Arts and Doctor of Philosophy.

The requirements for the M.A.* are: (1) 10 full courses at least 8 of which must be on the 300 level. These courses usually include one or two full courses of Math 330—the writing of the Master's Thesis. They may include seminars and reading courses; (2) The basic courses, Math 316, 318 and 325 must be included. Each of these requirements may be waived for a student presenting evidence satisfying the department of his or her knowledge of the material in question; (3) A Master's Thesis and (4) An oral examination.

A student working toward the Ph.D. degree and electing to omit the M.A. thesis and M.A. oral examination will be recommended for the M.A. degree upon successful completion of the Ph.D. Preliminary Examination.

The requirements for the Ph.D.* follow the general requirements of the graduate school. The Ph.D. Preliminary Examination is usually given orally but which may be written under certain circumstances. Students should consult with their advisors by November of their second year. Students entering with a Master's degree should discuss this immediately. Failure to take this examination at the appropriate time may result in the department not recommending a student for continued support. Scholarships, graduate instructorships, new courses are subject to final approval by the Graduate Board.

The language requirement will be considered to have been fulfilled if the candidate can demonstrate sufficient linguistic ability to carry on effective research in his or her field. The department's decision will depend heavily upon the recommendation of the candidate's advisor.

*All candidates for the M.A. and Ph.D. degrees in Mathematics will be required to serve as teaching assistants or as assistants in the Computing Center as part of the work for their degrees.

1. THE ART OF MATHEMATICAL EXPRESSION.

An examination of the way in which abstract methods and processes are used to express ideas about the real world. Special attention will be given to Word Problems and Elementary Mathematical Models.

Full course, Modules 1-2. Mr. Kennison and Staff.

10. MATH CLINIC AND TUTORIAL.

Individual conferences, diagnostic tests, programmed exercises and projects are used to develop mathematical skills, concepts and confidence. This course does not involve classes but relies on a one-to-one approach. It may be taken more than one Module.

Variable credit.

Modules Mr. Kennison and Staff.

11. PRECALCULUS.

Mathematical techniques needed for Calculus.

Full course, Modules 3-4.

Full course, Module 5. Staff.

12. CALCULUS.

Introduction to differential and integral calculus of one variable; sequences and series; essential for further study in mathematics as well as for the study of applications in the natural sciences. Not open to students who have taken Math 15 or 16. One year long. May be started Modules 1-2 or Modules 3-4.

Full course, Modules 1-2.

Full course, Modules 3-4.

Full course, Module 5. Mr. Kennison and Staff.

13. INTERMEDIATE CALCULUS.

This course assumes the knowledge of one variable calculus and will deal with functions of several variables. Partial derivatives, multiple integrals, line and surface integrals and their applications will be among the topics covered. Prerequisite: Mathematics 12.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Tepper.

14. MATH FOR ELEMENTARY SCHOOL TEACHERS.

Not offered, 1974-75.

Required mathematics for those who plan to teach in elementary school.

15. PROBABILITY AND CALCULUS FOR THE SOCIAL AND LIFE SCIENCES.

A course designed to acquaint the student with the foundations of probability and calculus. Emphasis will be on their applications, uses and abuses. Essential to those who want a solid background for questioning statistical assumptions. Not open for credit to students who have taken Math 12 or 16.
Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

16. HONORS CALCULUS.

A full year calculus sequence designed primarily for math majors.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Srinivasan.

88. DIRECTED READINGS IN MATHEMATICS.

Variable credit. Staff.

89. SPECIAL PROJECTS IN MATHEMATICS.

Variable credit. Staff.

100. MATHEMATICAL MODELS.

This course introduces the student to the concept of a mathematical model and its application to the solution of real problems. Examples will include applications in the areas of finance, transportation, production scheduling, economics and population theory. The course will include analysis of models constructed by students.
Full course, Modules 1-2. Mr. Poreda.

113. LINEAR ALGEBRA.

Systems of linear equations, matrices and determinants, vector spaces, linear transformations, eigenvalues and canonical forms.
Full course, Modules 1-2. Staff.

115. INTRODUCTION TO GROUP THEORY.

An introduction to fundamental concepts such as sets, mappings, equivalence relations, rings, integral domains, fields, and groups.
Full course, Modules 3-4. Staff.

117. PROBABILITY AND STATISTICS.

(Formerly Math 117 ad 118).

Basic topics from probability theory and statistics. Applications to the natural and social sciences are considered. Prerequisite: Math 12 or consent of the instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Stubbe.

118. FORTRAN FOR SCIENCE STUDENTS.

This is a one module introductory Fortran programming course designed especially for the student intending to pursue a major in the mathematically oriented sciences or for those who possess a fair amount of mathematical sophistication. Although there are no prerequisites, a student should have taken about three years of math in high school and should be able to handle elementary algebraic expressions and problems. This course will introduce the basic elements of the Fortran language and an overview of computer programming and data processing in general. This course is essentially an accelerated version of CS 101a. Offered Module 1; repeated Module 3.
Half course, Module 1.
Half course, Module 3. Mr. Stubbe, Mr. Poreda.

119. ELEMENTARY NUMERICAL ANALYSIS.

This is a one module introductory course in numerical analysis and the application of computers to the solution of certain numerical problems. Topics covered will include interpolation, error analysis and interactive methods. Students preparing for the

third actuarial science exam are encouraged to take this course. Prerequisite: Math 12 and Math 118 or CS 101 or permission.
Half course, Module 2. Mr. Stubbe.

120. LINEAR PROGRAMMING.

This is a one module course in linear programming, its applications and numerical algorithms. The course will include Dantzig (Simplex) algorithm and integer programming. This course will require a modest amount of Fortran programming and is intended to follow Math 118, CS 101a or the equivalent. Prerequisite: Math 118 or permission.
Half course, Module 4. Mr. Poreda.

124. INTRODUCTION TO GEOMETRY.

Not offered, 1974-75.

Topics from projective geometry, non-Euclidean geometry, foundations of Euclidean geometry and topology. Prerequisite: Equivalent of Math 11.

125. THEORY OF NUMBERS.

Not offered, 1974-75.

A study of some properties of divisibility, prime numbers, congruences and residues. Prerequisite: Equivalent of Mathematics 11.

135. PATTERN RECOGNITION.

Not offered, 1974-75.

The development of computerized methods for recognizing, in a larger collection, a sub-set of "points" which has a "group" property; for determining groups having certain properties in common regardless of shape and size; and for calculating the most probable properties of a partially constructed (or partially hidden) group. The 19 by 19 Japanese Go Board will be used as a model.

140. INTRODUCTION TO MATHEMATICAL LOGIC.

A course designed to show the student how to construct a formal system and proofs within it. Topics to be covered include propositional and predicate calculus.
Half course, Module 5. Staff.

145. ELEMENTARY DIFFERENTIAL EQUATIONS.

An introduction to elementary techniques and concepts for solving and applying differential equations. Prerequisite: Math 13a or permission of the instructor.
Full course, Modules 3-4. Mr. Stubbe.

150. SEMINAR IN MATHEMATICAL METHODS AND MATERIALS.

Methods and Materials are taught: (1) to acquaint the student with various methods of approach for theories on teaching math on the secondary school level, and (2) to give the student a pre-student-teaching experience. While conducting mini-courses in math with South High School and the Alternative School, the seminar discusses articles that are concerned with teaching math, the relationship of the theories to the practice, the problems that are encountered within the mini-courses, and methods of teaching math. Various field trips and guest speakers will be included.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Tepper.

153. ACTUARIAL SCIENCE.

This course will deal with the mathematics of finance and its applications. Compound interest, life contingencies and population theory will be among the topics covered. The course is designed to introduce the student to the material included in the third and fourth (F.S.A.) actuarial exams. Prerequisite: Math 12 or permission.
Full Course, Modules 1-2. Mr. Tepper, Mr. Poreda and Staff.

200. ADVANCED PROJECTS.

This course is intended for students pursuing advanced projects that involve mathematics. These projects might arise from mathematics or from some other discipline. Signature required.
Variable credit. Staff.

214. MODERN ANALYSIS.

Topological and metric methods are introduced and studied. These generalize and explain many ideas first encountered in calculus. These methods will be applied to study differentiation, integration and convergence, among other topics, in greater depth. Prerequisite: Mathematics 13 and 113a or consent of the instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

215. MODERN ALGEBRA.

Intended for the prospective graduate student in mathematics. It introduces the theory of groups, rings, integral domain, fields, and related topics. Prerequisite: Mathematics 113 or consent of the instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Kilmoyer.

221. CALCULUS OF VARIATIONS.

Not offered, 1974-75.

Euler's equations, canonical forms, classical examples, isoparametric problems, variational principles, Hamilton-Jacobi theory. Corequisite: Mathematics 13.

244. DIFFERENTIAL EQUATIONS.

Not offered, 1974-75.

Topics will include methods of solution and qualitative theory of first order and linear ordinary differential equations. Prerequisite: Mathematics 113.

245. APPLIED MATHEMATICS.

Not offered, 1974-75.

This course covers topics from advanced calculus which are useful for applications to the sciences.

247. OPERATIONS RESEARCH.

Not offered, 1974-75.

Linear Models, Linear Programming, the simplex method, sensitivity analysis and network analysis are covered in first semester. Second semester covers Dynamic Programming. Prerequisites: Mathematics 12, 113 and Computer Science 101.

290. TOPICS IN ANALYSIS.

Content will be changed from year to year.

Staff.

291. TOPICS IN ALGEBRA.

Content will be changed from year to year.

Staff.

292. TOPICS IN TOPOLOGY.

Content will be changed from year to year.

Staff.

293. TOPICS IN GEOMETRY.

Content will be changed from year to year.

Staff.

298. HONORS I.

Staff.

299. HONORS II.

Staff.

300. SETS AND TOPOLOGY.

The foundations of set theory and the relationship of various fundamental axioms, such as Zorn's lemma and the Axiom of Choice. Point-set topology as far as the Hahn-Mazurkiewicz Theorem.

316. FUNCTIONS OF A COMPLEX VARIABLE.

Analytic functions, line integrals, conformal mapping. Riemann surfaces. Prerequisite: Mathematics 214 or consent of the instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Poreda.

318. FUNCTIONS OF A REAL VARIABLE.

The real number system, topology, measure theory and related topics. Signature required.
Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

321. ALGEBRAIC TOPOLOGY.

Not offered, 1974-75.

Introduction to algebraic topology including fibrations and coverings, homotopy and homology. The relation with category theory will be emphasized. Prerequisites: Mathematics 215 and 318 or consent of the instructor.

325. ADVANCED MODERN ALGEBRA.

Galois theory, group theory, Wedderburn structure theorems for rings and linear algebras, introduction to algebraic number fields. Prerequisite: Mathematics 215.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Srinivasan.

326. SELECTED TOPICS IN COMPLEX ANALYSIS.

Not offered, 1974-75.

Topics selected from the theory of univalent and multivalent functions, geometric function theory, zeros of polynomials and extremal polynomials. Prerequisite: Mathematics 316 or consent of the instructor.

327. FUNCTIONAL ANALYSIS.

Staff.

330. MASTER'S THESIS.

Staff.

335. SELECTED TOPICS IN ALGEBRA.

Not offered, 1974-75.

Prerequisites: Mathematics 325 or consent of the instructor.

341. DIFFERENTIAL EQUATIONS.

Not offered, 1974-75.

Ordinary differential equations, theory and techniques of solutions. Partial differential equations. Fourier transform, distributions and their applications.

358b. CATEGORY THEORY.

Introduction to the basics of category theory.

Staff.

376. REPRESENTATION THEORY OF FINITE GROUPS.

Not offered, 1974-75.

Prerequisite: Mathematics 325 and consent of the instructor.

381. SEMINAR IN COMPLEX VARIABLES.

Staff.

382a. SEMINAR IN ABSTRACT ANALYSIS.

Staff.

383. SEMINAR IN ALGEBRA.

Staff.

384. SEMINAR IN CATEGORY THEORY.

Staff.

390. READINGS IN MATHEMATICS.

Reading of the mathematical literature related to the student's research program.

Staff.

391. RESEARCH IN MATHEMATICS.

Direction of the Ph.D. dissertation.

Staff

PHILOSOPHY

DEPARTMENT FACULTY

Albert A. Anderson, Ph.D., Associate Professor of Philosophy
Robert N. Beck, Ph.D., Professor of Philosophy, Department Chairman
Gilbert S. Markle, Ph.D., Associate Professor of Philosophy*
Gary E. Overvold, Ph.D., Associate Professor of Philosophy
Ronald R. Talmage, Ph.D., Visiting Assistant Professor of Philsophy
Walter E. Wright, Ph.D., Associate Professor of Philosophy

*On leave of absence, 1974-75.

UNDERGRADUATE PROGRAM

The department offers courses to students who wish to broaden their perspective and trace relations among the various fields of knowledge and to students who wish to major in philosophy.

The major consists of at least 8 full courses in philosophy which should include either Phil. 101 or Phil. 160, two courses from the Phil. 120 series, and a seminar (Phil. 220-240). Also required are 6 full courses in related fields. These are determined according to the student's special interest. Course programs for majors require approval of the departmental chairman.

The outside field requirement in philosophy of 9 full courses (or the equivalent) requires specific course determination. Courses credited toward this requirement must be individually approved by the departmental chairman as part of the major's program.

It is expected that majors take at least their upper-level courses (140 and above) in philosophy on a graded basis.

Introductory courses have numbers 100-125; intermediate courses, 140-160; advanced courses, 170-190; and research courses, 200-240.

COURSES

100. PROBLEMS OF PHILOSOPHY.

Nature and method of philosophy. Application of philosophical method to contemporary personal and social problems. Detailed analysis of some typical problems in various fields of philosophy. Limited to freshmen.
Full course, Modules 3-4. Mr. Anderson.

101. INTRODUCTION TO LOGIC.

Logic as philosophy and practice. An introduction to the meaning of logical reasoning with a study of its principles and methods. An investigation of the philosophical presuppositions of logic.
Full course, Modules 1-2. Mr. Overvold.

105. PERSONAL VALUES.

Exploration of philosophical approaches to the fundamental human value problems such as truthfulness, sexual integrity, love, violence, war, and death. The connection between personal value choices and ethical theories will be studied. Limited course, preference to freshmen.
Full course, Modules 1-2. Mr. Wright, Mr. Beck.

110. PROBLEMS OF PHILOSOPHY.

See description under Phil. 100. Not open to freshmen.
Full course, Modules 3-4. Mr. Beck.

111. SCIENCE AND HUMAN VALUES.

Not offered, 1974-75.

Theoretical and practical issues concerning the interrelations between science and human values. Values in scientific method, technology and values, pure and applied sciences, science and ethical relativism. Views of man in natural and social sciences and their connections with values and methodology.
Full course. Staff.

Philosophy 120 series is organized in five courses:

121. HISTORY OF ANCIENT PHILOSOPHY.

The origins of philosophical thought in the West with emphasis on the early Greeks, Plato, and Aristotle. Examination of classical theories of man, society, and nature providing background for later philosophical reflection.
Full course, Modules 1-2. Mr. Anderson.

122. HELLENISTIC AND MEDIEVAL PHILOSOPHY.

Developments in Hellenistic and medieval philosophy from Epicureanism, Stoicism, Skepticism, and Neo-Platonism through Augustine, Aquinas, and William of Occam to the attack on scholasticism. Prerequisite: Philosophy 121, 100, or 110.
Full course, Modules 1-2. Mr. Talmage.

123. HISTORY OF MODERN PHILOSOPHY.

Major thinkers and philosophical movements from the beginning of the modern period in Descartes through Hume. The two great trends in modern thought—Continental Rationalism and British Empiricism—will be examined in particular regard to their implications for, and effects upon, our contemporary view of the world. Prerequisite: one full course in philosophy.
Full course, Modules 3-4. Mr. Talmage.

124. KANT AND THE NINETEENTH CENTURY.

Not offered, 1974-75.

Trends in philosophy during this period considered as a background for understanding contemporary philosophy. Philosophers to be studied include Kant, Fichte, Hegel, Schopenhauer, Nietzsche, Mill, Marx, Engels, and Comte. Prerequisite: Philosophy 123.

Full course. Mr. Wright.

125. HISTORY OF CONTEMPORARY PHILOSOPHY.

An investigation of the major types of philosophical thought distinctive to recent philosophy: Pragmatism, Logical Positivism, Ordinary Language Philosophy, Existentialism, and Phenomenology. Emphasis upon each as a coherent perspective upon experience with a focus on the style and methodology of each view. Prerequisite: one full course in philosophy.

Full course, Modules 3-4. Mr. Overvold.

INTERMEDIATE COURSES

141. PROBLEMS OF ETHICS.

Consideration of important ethical theories to acquaint students with the problems and scope of ethics and to aid him in the formulation of an ethical outlook. Open to juniors and seniors.

Full course, Modules 3-4. Mr. Beck.

142. SOCIAL PHILOSOPHY.

Not offered, 1974-75.

Principles underlying social structure and functions. Examination of the goals, purposes, norms and ideals of social process, and the relation of that process to the individual good. Open to juniors and seniors.

Full course. Mr. Beck.

145. EXISTENTIALISM.

Not offered, 1974-75.

A study of the major philosophers in twentieth-century Existentialism with a focus on their redefinition of man in terms of his "lived world" and his nonrational capacities. Prerequisite: two full courses in philosophy.

Full course. Mr. Overvold.

146. KIERKEGAARD AND NIETZSCHE.

Investigation of the roots of contemporary existential thought in the nineteenth century through the analysis of major writings by Soren Kierkegaard and Friedrich Nietzsche. Emphasis on their doctrines of knowledge, existence, and man. Open to juniors and seniors. Prerequisite: one full course in philosophy.

Full course, Module 5. Mr. Wright, Mr. Overvold.

149. AESTHETICS.

Representative theories of the nature of the arts (literature, drama, music, and visual arts), the creative process, aesthetic experience, and art criticism such as those of Aristotle, Nietzsche, Collingwood, Fischer, Dewey, Langer, Sartre, and Arnheim. Prerequisite: one full course in philosophy.

Full course, Modules 1-2. Mr. Anderson.

150. PHILOSOPHY OF RELIGION.

The nature of religion as revealed by the examination of representative forms of religious experience. Emphasis is placed on the effect of contemporary knowledge on the understanding of the religious dimension. Open to juniors and seniors. Prerequisite: one full course in philosophy.

Full course, Modules 3-4. Staff.
Full course, Module 5. Mr. Wright
(Prerequisite: permission of instructor.)

151. PHILOSOPHY OF LITERATURE.

Philosophical approaches to poetry, drama, and the novel through consideration of issues such as truth in literature, the writer and society, the nature of imagination, literary style, and criteria for criticism. Prerequisite: permission of instructor.

Full course, Module 5. Mr. Anderson.

153. HISTORY OF AMERICAN PHILOSOPHY.

Not offered, 1974-75.

Survey of important philosophical ideas in America with emphasis

on their relationship to American experience. Prerequisite: one full course in philosophy.
Full course. Mr. Beck.

155. PHILOSOPHY OF SCIENCE I.

An introduction to certain problems of epistemology and metaphysics, cast into the terms and context of twentieth-century science. The questionable "ontological status" of theories is the principal point of focus. Prerequisite: one full course in philosophy.
Full course, Modules 1-2. Mr. Talmage.

156. PHILOSOPHY OF SOCIAL SCIENCE.

A dialectical examination of naturalistic and phenomenological approaches to social reality. The concepts to be examined include: behaviorism, consciousness, functionalism, cultural relativism and determinism, rationality, values, reductionism and holism. Prerequisite: one full course in philosophy.
Full course, Modules 3-4. Staff.

160. SYMBOLIC LOGIC.

Advanced work in symbolic logic, with stress on principles of deductive rigor. Some consideration of philosophical implications of logic. Topics to be discussed include: sentential calculus, predicate calculus, Tarski's definition of truth, selected metatheorems, and Henkin's completeness proof for the first order predicate calculus. Prerequisite: permission of instructor.
Full course, Modules 3-4. Mr. Wright.

ADVANCED COURSES

171. KANT.

Not offered, 1974-75.

Immanuel Kant viewed as a synthesis of the traditions of Continental Rationalism and British Empiricism. Prerequisite: two full courses in philosophy, including Philosophy 123.
Full course. Staff.

175. METAPHYSICS.

Clarification of the nature of metaphysical thinking and views of representative philosophers on the nature of space, time, causality, matter, force, self-identity, mind, body, and freedom. Prerequisite: two full courses in philosophy.
Full course, Modules 1-2. Mr. Wright, Mr. Overvold.

177. CONCEPTS OF THE SELF.

An investigation of several perspectives on the nature of the human self. The course will deal with the writings of such thinkers and philosophers as Plato, Aristotle, Descartes, Hume, Heidegger, Strawson, Ornstein, and Castaneda. Emphasis on group discussion and interaction. Prerequisite: two full courses in philosophy.
Full course, Modules 1-2. Mr. Wright.

180. EPISTEMOLOGY.

The study of epistemology is, broadly, the study of the nature of knowledge. Within this very general heading are a host of specific topics and from that group this course will focus on the interrelations among belief, knowledge, evidence, proof, truth and also will consider the problem of skepticism. Prerequisite: two full courses in philosophy.
Full course, Modules 3-4. Mr. Overvold.

185. PHILOSOPHY OF LANGUAGE.

An examination of the concepts of reference, truth, meaning, translation, rationality, objectivity, linguistic relativism and determinism, intentionality, and linguistic universals, in light of traditional philosophical problems about the relations between language and reality. Prerequisite: two full courses in philosophy, or permission of instructor.
Full course, Modules 1-2. Mr. Talmage.

188. THEORY OF VALUE.

Not offered, 1974-75.

Definitions of "value"; psychological and social conditions of different values; function of value judgments; nature of standards and their role in criticism—in art, science, morals. Foundations of the normative disciplines, i.e., logic, ethics, aesthetics. Prerequisite: two full courses in philosophy including a course in one of the following areas: logic, ethics, or aesthetics.
Full course. Mr. Anderson.

190. PHILOSOPHY OF SCIENCE II.

Not offered, 1974-75.

A more advanced treatment of selected problems in scientific explanation. One such problem is that of "artificial intelligence" in

machines. Does the traditional problem of mind and body become any less onerous when viewed within the developing context of Cybernetics and information theory? Some symbolic logic is required. Prerequisite: two full courses in *both* philosophy and a natural science. Philosophy 155 is recommended.
Full course. Staff.

RESEARCH IN PHILOSOPHY

200. ADVANCED TOPICS IN PHILOSOPHY.

Group discussion, individual tutorials and independent research in areas of philosophy. The independent research involves a topic of the student's choice within the designated area. Prerequisite: where appropriate, completion of regular department course in the area; two full courses in philosophy; and instructor's permission. Offerings vary each semester; variable credit. Staff.

Modules 1-2, 1974-75

Greek Philosophy, Module 1.	Mr. Anderson.
Aesthetics, Module 2.	Mr. Anderson.
Heidegger, Modules 1-2.	Mr. Overvold.
Theory of Value, Modules 1-2.	Mr. Beck.
Modern Philosophy, Modules 1-2.	Mr. Talmage.

Modules 3-4, 1974-75

Metaphysics, Modules 3-4.	Mr. Wright.
Merleau-Ponty, Modules 3-4.	Mr. Overvold.
Problems of Punishment, Modules 3-4.	Mr. Beck.
Philosophy of Language, Modules 3-4.	Mr. Talmage.

201. SURSEMINAR: RESEARCH AND WRITING IN PHILOSOPHY.

Not offered, 1974-75.
Prerequisite: permission of instructor.
Half course. Mr. Beck.

202. SURSEMINAR: PHILOSOPHICAL JOURNALS.

Not offered, 1974-75.
Prerequisite: permission of instructor.
Half course. Mr. Beck.

203. SURSEMINAR: TEACHING IN PHILOSOPHY.

Not offered, 1974-75.
Prerequisite: permission of instructor.
Half course. Staff.

204. SURSEMINAR: READINGS IN PHILOSOPHY IN GERMAN.

Not offered, 1974-75.
Prerequisite: permission of instructor.
Half course. Mr. Wright.

205. SURSEMINAR: PHILOSOPHY OF ARCHITECTURE.

Half course, Module 5. Mr. Anderson, Mr. Overvold.

220-240. SEMINARS IN PHILOSOPHY.

Advanced studies of topics of central importance to philosophy, such as the philosophy of Whitehead, Spinoza, Plato, Hegel, the nature of the *a priori*, the problem of justice, the nature of truth, phenomenology, the philosophy of mind, the philosophy of law. Offerings vary each year; those for 1974-75 are listed below. Prerequisite: four full courses in philosophy or permission of instructor. Staff.

220. ARISTOTLE.

Full course, Modules 3-4. Mr. Anderson.

221. PHILOSOPHY OF LAW.

Full course, Modules 1-2. Mr. Beck.

222. RATIONALITY.

Full course, Modules 3-4. Mr. Wright.

223. PHILOSOPHY OF MIND.

Full course, Modules 1-2. Mr. Overvold.

224. TOPICS IN SOCIAL PHILOSOPHY.

Full course, Modules 3-4. Mr. Beck.

290. PHILOSOPHY OF EDUCATION.

Description offered in the department statement under Education.
Full course, Modules 1-2. Mr. Beck.

299. HONORS IN PHILOSOPHY.

Advanced individual study of philosophic problems. Honors includes the preparation of an acceptable thesis and a comprehensive examination. Prerequisite: consent of the department. Normally a one year program involving two full courses.
Variable credit.
Modules 1-2, 3-4. Staff.

PSYCHOLOGY

DEPARTMENT FACULTY

Seymour Wapner, Ph.D., G. Stanley Hall Professor of Genetic Psychology, Department Chairman
Mortimer Appley, Ph.D., Professor of Psychology and President of the University.
Robert W. Baker, Ph.D., Professor of Psychology
Robert Bibace, Ph.D., Professor of Psychology
Tamara Dembo, Ph.D., Professor of Psychology, Emeritus
Bernard Kaplan, Ph.D., Professor of Psychology, University Professor
Donald G. Stein, Ph.D., Professor of Psychology
Ina C. Uzgiris, Ph.D., Professor of Psychology
Morton Wiener, Ph.D., Professor of Psychology
Leonard E. Cirillo, Ph.D., Associate Professor of Psychology
Joseph H. deRivera, Ph.D., Associate Professor of Psychology
Rachel Falmagne, Ph.D., Associate Professor of Psychology
James D. Laird, Ph.D., Associate Professor of Psychology
David A. Stevens, Ph.D., Associate Professor of Psychology
Nicholas S. Thompson, Ph.D., Associate Professor of Psychology and Adjunct Associate Professor of Biology
William Damon, Ph.D., Assistant Professor of Psychology
Neil O. Rankin, Ph.D., Assistant Professor of Psychology
John A. Whiteside, Ph.D., Assistant Professor of Psychology

Adjunct Faculty

Edward E. Sampson, Ph.D., Professor of Sociology and Adjunct Professor of Psychology
David Zern, Ph.D., Associate Professor of Education and Adjunct in Psychology

Affiliated Staff

D. Frank Benson, M.D., Visiting Lecturer of Psychology
Donald M. Broverman, Ph.D., Affiliate Professor of Psychology
Nelson M. Butters, Ph.D., Visiting Lecturer of Psychology
Laird S. Cermak, Ph.D., Visiting Lecturer of Psychology
Robert A. Ciottone, Ph.D., Affiliate Assistant Professor of Psychology
Shannon T. Devoe, Ph.D., Associate Research Affiliate of Psychology
David Finkel, Ph.D., Affiliate Assistant Professor of Psychology
Harold Goodglass, Ph.D., Affiliate Professor of Psychology
Davis H. Howes, Ph.D., Visiting Lecturer of Psychology
Edith F. Kaplan, Ph.D., Visiting Lecturer of Psychology
David J. Meyerson, M.D., Visiting Lecturer of Psychology
Mariene Oscar-Berman, Ph.D., Visiting Lecturer of Psychology
Jeffrey Rosen, Ph.D., Visiting Lecturer of Psychology
William Vogel, Ph.D., Affiliate Professor of Psychology
Jacques Voneche, Ph.D., Affiliate Professor of Psychology
Edgar B. Zurif, Ph.D., Visiting Lecturer of Psychology

UNDERGRADUATE PROGRAM

Course Numbers. The undergraduate course numbering system has been reorganized and simplified (effective September 1, 1974). Ranges of course numbers now have specific meanings according to the following key:

Range	*Meaning*
100-109	Courses all majors must take (General, Quantitative Methods)
110-149	Primarily freshman and sophomore survey courses; psychology as a life science
150-189	Primarily freshman and sophomore survey courses; psychology as a social science
190-199	Special freshman and sophomore courses
200-214	Laboratory courses
215-229	Research courses
230-234	Primarily junior and senior survey courses; psychology as a life science
234-239	Primarily junior and senior survey courses; psychology as a social science

240-259 Primarily junior and senior specialized seminars (may not be taken for graduate credit without special permission)
260-289 Primarily junior, senior, and graduate specialized seminars (may be taken for graduate credit without special permission)
290-299 Special courses (honors, directed readings, research)

Major Requirements. The new expanded major in Psychology, which applies to students declaring their major after September 1, 1974, consists both of Psychology and related course requirements. The Psychology requirements are designed to insure exposure to one of the most basic distinctions in contemporary psychology, that of psychology approached as a life or a social science: to insure some familiarity with experimental and observational methods (laboratory and practicum requirement) to provide background in essential quantitative skills (statistics requirement-Psychology 105); and to guarantee several contacts with faculty in advanced, small-enrollment seminars.

The related requirement of two minors reflects the conviction of the department that all academic areas are actually or potentially related to psychology, but also that scholarship involves, at some point, studying subject matter in considerable depth.

1. *Psychology Courses*

Total of at least eight full-course equivalents, including:

a. 101 General Psychology
b. 105 Quantitative Methods
c. One full-course equivalent from range 110-149 or 230-234
(Survey courses: Psychology as life science)
d. One full-course equivalent from range 150-189 or 235-239
(Survey courses: Psychology as social science)
e. Two full-course equivalents from range 200-229
(Laboratory and Research courses)
f. Two full-course equivalents from range 240-289
(Upper level seminars)

2. *Related Courses*

Related courses are defined in terms of minors. A minor consists of at least four full-course equivalents in a single area of department. Two minors must be chosen from the following areas or departments:

Biology
Chemistry
Engineering, Applied Math, or Computer Science
Economics
Education
English
Foreign Language and Literature (includes Linguistics)
Geography
Government and International Relations
History
Mathematics
Philosophy
Physics
Sociology
Technology and Man
Visual and Performing Arts

There are two restrictions on permissable course sequences within an area or department:

a. In the case where a department offers more than one introductory course, only the course or courses designed to prepare students for further work in the area may be taken for related credit. In most departments, this excludes introductory courses designed for non-majors. Detailed information about this restriction may be obtained from the Psychology Department.

b. The courses must form a coherent sequence or program within the context of the department in which a minor is taken. In most cases, this will be self-evident. However, in doubtful cases the student must consult his or her psychology advisor and the department concerned.

The Honors Program.

Honors work in Psychology is available to seniors who have demonstrated high scholastic achievement and the ability to work independently in scholarly situations. Students may seek admission to the Honors Program by requesting the faculty member, under whose direction they intend to do research work, to submit their name to the full faculty for consideration. Students in the Honors Program carry out an independent empirical research project under the sponsorship of one or more faculty members. This research provides basis for a thesis which, upon completion, is presented and defended by the student before an Examining Committee of faculty members. On the basis of the report of the Examining Committee and the student's advisor for the project, the Department may recommend to the College Board that the student be awarded Departmental Honors at one of the following levels: Highest Honors, High Honors, or Honors in Psychology.

Students preparing for graduate work should also obtain a reading knowledge of French, German or Russian.

GRADUATE PROGRAM

General Requirements. The department admits to graduate work only those students who plan to enroll in the Ph.D. program on a full-time basis. The overall aim of the graduate program is to provide the student with a general integrated background covering the various areas of psychology. Within these emphases there are several specialized programs available and these are described briefly below. It should be noted that none of these programs are narrowly defined and that students can move back and forth among them relatively easily. In addition, beyond the relatively minimal requirements outlined below, students are not required to do any particular activities. To prevent some students from floundering in this "open" atmosphere, each student is assigned an advisor; the student has the opportunity to discuss their programs with their advisors and to seek guidance whenever he/she is in doubt as to the best course of action. While the program makes it possible for a student to pursue scholarly activity in collaboration with one or more faculty members, it also includes the satisfactory completion of the following more formal requirements to obtain the Ph.D. degree.

Course Work. Students ordinarily are expected to take four courses each semester for their first two years, including in their first year Experimental Methods (301) and Quantitative Methods (302). In subsequent years, students continue to enroll in a full program which ordinarily includes two or three content courses, research, and reading courses, etc. A total of at least 18 one-semester courses are required for admission to candidacy for the Ph.D. of which at least two must be from among a group including personality, social, developmental, phenomenological and cognition, and at least two must be from among the group including physiological psychology, learning, perception, and animal behavior.

Teaching apprenticeship program. All students are expected to become involved in teaching as apprentices. Since many students ultimately become college and university teachers, acquaintance with the demands and techniques of teaching over a range of courses is considered an important part of their graduate training. Ordinarily, a student might spend an average of 3 to 6 hours a week in an apprenticeship.

Qualifying examination in quantitative methods. All students are required to demonstrate competence in quantitative methods by satisfactory performance on a qualifying examination in that area. The examination is normally taken at the end of the student's first year, at the completion of the course in quantitative methods.

M.A. Degree. The M A. degree is awarded after satisfactory completion of at least eight one-semester courses or their equivalent, an M.A. thesis based on the collection and analyses of data, and an oral examination on the thesis. The requirements for the M.A. degree are ordinarily completed within the first two years of graduate work and students who have not completed their M.A. degree by that time will not be permitted to enroll for the third year.

Language requirement. All students are required to demonstrate their ability to translate professional material in a foreign language. The examination will require that the student translate a relatively brief passage, in a relatively brief time, with the aid of any materials the student wishes. Students are expected to have met this requirement before admission to candidacy for the Ph.D.

Major paper and oral examination. This paper, ordinarily to be written by the end of the third module of the student's third year, is expected to demonstrate the student's mastery of the research and theory in his area of specialization. An oral examination of this material will also be held, shortly after the paper has been submitted.

Admission to Candidacy. Satisfactory completion of the above requirements is necessary for admission to candidacy for the Ph.D. degree.

Ph.D. dissertation. The student demonstrates his ability to conduct independent research (under the supervision of a dissertation committee) by the presentation of an acceptable dissertation.

Ph.D. oral examination. Following submission of the dissertation to the department, a final oral examination is held in which the student presents and defends his/her dissertation and shows his/her competence in a general field of psychology as well as in his/her area of specialization.

SPECIAL TRAINING PROGRAMS

Training Program in Clinical Psychology. The Clinical Psychology Training Program which aims to provide students with competence in clinical methods as an integral part of their scholarly pursuits, requires, in addition to the other usual departmental requirements, the satisfactory completion of the Clinical Methods sequence; participation in the Psychological Services Center; completion of a year's internship in an agency approved by the American Psychological Association. Evidence of proficiency in clinical psychology through review of past clinical work carried out by the student or through examinations based on the assignment of a case specifically for this occasion will be required.

The Psychological Services Center was established in 1950 as a training center for doctoral candidates in clinical psychology and to offer psychological services to the Clark community. Undergraduate students have, over the years, made extensive use of the diagnostic and therapeutic services offered by the Psychological Services Center. Graduate students enrolled in the clinical training program are required to participate under close supervision in the Psychological Services Center for three years. Clients who require psychodiagnosis by tests are assigned to clinical students who are beginning their second year in the program. At that time, a clinical student may also elect to start carrying a client in psychotherapy. Third year clinical students are usually assigned two therapy cases. In the fourth year, the clinical student does intake interviews in addition to the continuation of psychodiagnosis by tests and psychotherapy. All participating clinical students are required to attend clinic conferences. Current regulations, which are sensitive to changing sources of student financial support, allow a clinical student to opt out of one of the two advanced levels of Psychological Services Center participation if the student meets certain criteria. This is usually the case when a clinical student, with faculty approval, takes a clinical position for financial reasons. The position must clearly allow the student to obtain what the faculty considers to be the equivalent of the supervised clinical training they would ordinarily have obtained through the Psychological Services Center. For further information, write to the director of the program, Dr. Roger Bibace.

Developmental Psychology Program. This program is designed to prepare students for a career in research, teaching, and scholarly activity in development psychology. It strives to impart competence in the experimental and comparative analysis of psychological development as well as sophistication regarding theoretical issues involved. The subject matter ranges over the life cycle, from studies of infancy to studies of senescence, and covers a wide spectrum of behavioral phenomena in the areas of cognitive, language, social emotional, and aesthetic development. These phenomena may be studied in populations such as normal children, adults, the aged, various pathological populations, lower animal species, and comparatively across populations, across different age levels, or through the analysis of changes in behavior with age or as a function of particular experiences. Such studies may be conducted in the department or through arrangements with the Parents' Cooperative Nursery School at Clark University, the Worcester Public School System, Worcester State Hospital, and other institutions around Worcester and Boston. The program also encourages the application of developmental principles, concepts, and methods to problems in general experimental psychology, psychopathology, social psychology, and so on. For further information, write to the director of the program, Dr. Bernard Kaplan.

Social Psychology Program. The major focus of the social program is on the development of theoretical frameworks for understanding persons, their relationships, and the transactions between these relationships and the nature of society. Conventional experimental work in areas such as verbal and non-verbal communications, socialization, attribution processes, self-concepts, and interpersonal relations is going on in the department. Less traditional emphases include the study of the phenomenology of social processes, and the ethological and genetic approaches to understanding social behavior. Uniting these diverse activities is a common concern with the theoretical and metatheoretical structures which may enable us to understand social phenomena and the philosophical bases for these conceptualizations. For further information, write to the director of the program, Dr. Joseph deRivera.

Experimental Psychology Program. Training in experimental psychology is available in a variety of areas, including perception, human learning and cognition, animal learning and motivation, physiological, comparative animal behavior and ethology. While students often specialize in one area, they are encouraged to develop competence in several areas. Students interested in neuropsychology, psychopharmacology, electrophysiology, and neurochemistry have utilized for research and training not only our own laboratories, but also other specialized facilities in such institutions as Worcester State Hospital, Boston Veteran's Administration Hospital, and several non-profit research laboratories in the area. Since our experimental programs are rather broad, those interested in more information should write to the Department Chairman, Dr. Seymour Wapner.

Rehabilitation Research Training. In conjunction with all other areas of specialization, rehabilitation research training is available. This training is designed to prepare students for investigation of psychological problems as they occur in everyday life. Emphasis on development of novel techniques and concepts is the main feature of the training. An integral part of the training is an apprenticeship-practicum during which the various phases of research in real-life settings are examined under the guidance of a staff member. This training is especially pertinent to those who are interested in social-emotional and value problems of handicapped and non-handicapped people. For further information, write to Dr. Tamara Dembo.

Interdisciplinary Work. The department recognizes the interest of some students to undertake study and research which cuts across disciplines or areas that now exist. Interdisciplinary activity by student is feasible at Clark inasmuch as some members of the Psychology faculty are now, or recently have been, engaged in activities with faculty of other department.

Applicants for graduate study in psychology, who are interested in securing more detailed information concerning the Department and its programs, are urged to write to the Department for a brochure, "Information on the Graduate Program in Psychology."

THE HEINZ WERNER INSTITUTE OF DEVELOPMENTAL PSYCHOLOGY

Associated with the Department is the Heinz Werner Institute of Developmental Psychology, which has three aims: first, to integrate various research programs dealing with developmental problems; second, to bring to Clark University scholars, teachers, and research workers from disciplines for which developmental problems are pertinent such as anthropology, biology, and certain areas of medicine; third, to train research workers on post-doctoral levels in the comparative-developmental approach to behavior. Information regarding post-doctoral work at the Institute may be obtained by writing to Dr. Bernard Kaplan.

COURSES

101. GENERAL PSYCHOLOGY.

Introduction to the principles of human behavior. No prerequisite. Offered Modules 1-2; repeated in Modules 3-4.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Vogel.

105. QUANTITATIVE METHODS.

The theory of experimental inference and the logic of experimental design. Offered Modules 1-2; repeated in Modules 3-4.
Full course, Modules 1-2. Mr. Rankin.
Full course, Modules 3-4. Ms. Falmagne.

115. THE "EVOLUTION" OF HUMAN BEHAVIOR

A critical analysis of the "evolutionary" writings of Ardrey, Morris, Lorenz, Fox, Alland, Wickler, Morgan, Eibl-Eibesfeldt, and others. One lecture and two section meetings a week. Sections limited to 20. No prerequisite.
Full course, Modules 1-2. Mr. Thompson.

120. INTRODUCTION TO HUMAN LEARNING AND COGNITION. Not offered, 1974-75.

Introduction to the major theories, basic concepts and principal phenomena in the areas of learning, memory, problem solving, and language. The course is aimed at providing a (simplified) formulation of the central questions and issues in these areas, an introduction to the experimental method for studying them, and an overview of the major findings.
Ms. Falmagne.

130. PSYCHOLOGY OF LEARNING.

Methods and findings in the study of learning are discussed, with emphasis on their relation to theories of learning. Selected controversial issues are examined.
Full course, Modules 3-4. Mr. Stevens.

140. SENSATION AND PERCEPTION.

An introductory course that includes exposure to the basic concepts of sensory physiology and sensory processes. Emphasis is on auditory and visual perception, but all six major senses are considered. The course is aimed at providing a solid background in this, the oldest area of experimental psychology, but also deals with such topics as the relation between perception and aesthetics (both of the everyday and concert-hall variety), and the development and subsequent degeneration of sensory and perceptual capabilities that occur between birth and death.
Full course, Modules 1-2. Mr. Whiteside.

150. INTRODUCTION TO CHILD DEVELOPMENT.

The development of intellectual and social functioning in the child will be discussed. Theoretical approaches to conceptualizing change in the developing child will be emphasized: psychoanalytic, Piagetian, and behavioristic approaches will be contrasted.

Full course, Modules 1-2. Mr. Damon,
Full course, Modules 3-4. Mr. Whiteside,

162. PSYCHOANALYTIC INTERPRETATION OF BEHAVIOR.

Psychoanalytic contribution to the understanding of human behavior and conflicts. Limited to 40. No prerequisite. Offered Modules 1-2; repeated Modules 3-4.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Bibace.

169. THE PSYCHOLOGY OF LOVE AND HATE.

An examination of how the emotions of love and hate are manifested in infancy, childhood, adult life, and in social-collective phenomena. The course will deal with related emotions such as envy, greed, jealousy, despair, etc. Permission of the instructor required. Also listed U.P. 169.
Full course, Module 5. Mr. Kaplan.

170. INTRODUCTION TO SOCIAL PSYCHOLOGY.

An examination of the relationship between the individual and the social system as understood through the theories, methods, findings, and applications of social psychology. Also listed as Sociology 105.
Full course, Module 1. Mr. Sampson.

172. PSYCHOLOGY OF PERSONALITY.

Consideration of various theoretical approaches, including psychoanalytic, behaviorist and self theories, and of research work in areas such as anxiety, stress, unconscious processes, emotion, and motivation. Offered, Modules 1-2; repeated Modules 3-4.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Laird, Staff.

173. ABNORMAL PERSONALITY.

Examination of the issues involved in the definition, description, and explanation of deviant behavior. Prerequisite: Psych 172. Offered, Modules 1-2; repeated Modules 3-4 and Module 5.
Full course, Modules 1-2.
Full course, Modules 3-4.
Full course, Module 5. Mr. Baker.

184. PHENOMENOLOGICAL PSYCHOLOGY.

The description and analysis of experience, particularly emotional experience. Behavior is considered as an independent rather than a dependent variable. We examine the implications of concepts such as assertion, commitment, identification, and liberation, and search for the essential structures of experience.
Full course, Modules 3-4. Mr. deRivera.

185. HUMANISTIC PSYCHOLOGY.

Humanistic psychology is concerned with knowledge about personal development, creative transactions, and the establishment of conditions for realizing human values. Ideas in this field will be tested by seeing whether or not they apply to ourselves. Therefore, this course has a series of "laboratories" and the student should be willing to be a member of a small group and participate in projects that range from spiritual work to the work of changing our society. Interested students should see the fuller description in Room 201, Jonas Clark Hall. No prerequisites.
Full course, Module 5. Mr. deRivera.

191. HISTORY OF PSYCHOLOGY.

Historical development of theories and methods of psychology. Limited to 50. Also listed U.P. 191.
Full course, Modules 1-2. Mr. Kaplan.

200. LABORATORY IN ETHOLOGY.

An introduction to observational techniques in the study of human and animal subjects. Prerequisite: Psych 105. Permission of the instructor required. Limited to 10.
Full course, Module 5. Mr. Thompson.

201. LABORATORY IN SOCIAL PSYCHOLOGY.

Focuses on the behavior of small groups. Participation in this laboratory includes chairing one of the discussion groups in Psychology 184. Limited to 20. Prerequisites: Psych 170, 105.

Full course, Modules 1-2. Staff.

202. LABORATORY IN CHILD RESEARCH.

An introduction to methods used in the study of child thought and behavior. Students will conduct research projects involving observational, experimental, and interviewing techniques. Discussions will consider means of data analysis as well as data collection. Prerequisites: Psych 105, 150. Permission of the instructor required.

Full course, Modules 3-4. Mr. Damon.

203. LABORATORY IN HUMAN LEARNING AND COGNITION.

Experimental studies in the area of concept learning, memory, reasoning, and logic and language development. Examination of related methodological questions involving conception and design of experiments, data analysis and interpretation and theory testing, as well as survey of background material directly relevant to the studies. Permission of the instructor required. Prerequisite: Psych 105.

Full course, Module 4. Ms. Falmagne.

204. LABORATORY IN LEARNING.

The course is designed to familiarize students with research methods and experimental designs used in investigations of theories of learning and learning phenomena, with both human and animal subjects. Limited to 20. Prerequisites: Psych 105, 130.

Full course, Modules 1-2. Mr. Stevens.

205. LABORATORY IN THINKING.

Empirical studies of selected problems in such areas as concept formation, problem solving, and psycholinguistics. Related theoretical and methodological issues considered in their historical context. Permission of the instructor required. Prerequisite: Psych 105.

Full course, Modules 1-2. Mr. Cirillo.

206. LABORATORY IN PERSONALITY.

Issues and problems in psychological research in general and in the personality area in particular are examined, the problems being exemplified in studies developed and performed by the class group and by individuals. Experiments may be in any of the conventional areas of personality research, such areas as perceptual defense, motives and performance, self perception, experimenter influence and emotions. Prerequisite: Psych 172, 105. Permission of the instructor required. Offered Modules 3-4; repeated, Module 5.

Full course, Modules 3-4.
Full course, Module 5. Mr. Laird.

207. LABORATORY IN PERCEPTION.

The laboratory course in perception will include investigation of sensory and perceptual phenomena in a variety of sense modalities. Theoretical and methodological issues will be considered in the context of specific experimentation. Limited to 12. Prerequisite: Psych 105.

Full course, Modules 3-4. Mr. Whiteside.

208. LABORATORY IN CHILD PSYCHOLOGY.

Introduction to research methods employed in the study of child behavior through participation in studies carried out by the class, with particular emphasis on experimental designs currently used in the field. Related theoretical and methodological issues will be discussed with the aim of placing the experimental study of child behavior within the study of development. Permission of the instructor required. Prerequisites: Psych 105, 150.

Full course, Modules 1-2. Ms. Uzgiris.

209. LABORATORY IN PHYSIOLOGICAL PSYCHOLOGY. Not offered, 1974-75.

Introduction to methods, techniques, and experiments used to study the physiological bases of behavior. Students also participate in debates of interest to the group. Permission of the instructor required.

Mr. Stein.

210. LABORATORY IN PHENOMENOLOGY.

This laboratory is designed to acquaint students with the method of "conceptual confrontation"—a type of phenomenology that is useful in exploring affects and interpersonal phenomena. Prerequisite: Psych 184 or a philosophy course in phenomenology.

Full course, Module 2. Mr. deRivera.

211. FIELD OBSERVATION: COGNITIVE AND SOCIAL-INTERPERSONAL BEHAVIOR IN THE CLASSROOM SETTING.

Illustration of various cognitive and social-interpersonal models of human behavior in the classroom setting. Special consideration will be given to the work of Freud, Piaget, Skinner, Wertheimer, Lewis, and F. Kluckhohn. Students will carry out field observations, and formulate and execute their own individual projects. Permission of the instructor required. Also listed: Education 211. Prerequisite: Psych 105.
Full course, Modules 3-4. Mr. Zern.

213. LABORATORY IN INTERPERSONAL RELATIONS.

Interviewing in the area of interpersonal relations with emphasis on value possessions, value transmissions and value losses. Corequisite: Psych 286. Limited to 20.
Full course, Modules 3-4. Ms. Dembo.

214. LABORATORY IN REHABILITATION.

Stress is placed on interview technique in the study of rehabilitation issues. Corequisite: Psych 253. Limited to 20.
Full course, Modules 1-2. Ms. Dembo.

215. RESEARCH IN SPATIAL PERCEPTION.

Not offered, 1974-75.

Direction of individual students in the empirical investigation of the process of objectification in perception. Permission of the instructor required.
Mr. Rankin.

216. RESEARCH IN EARLY SOCIAL DEVELOPMENT.

Students will participate in an on-going research program focussing on the development of social and moral conceptions in young children. Weekly meetings will discuss study design, data analysis, and methods of data collection. Students will read and discuss relevant socialization literature, and will participate in the construction and execution of research projects. Permission of the instructor required. Offered Modules 1-2 and continued through Modules 3-4.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Damon.

217. RESEARCH ON DEVELOPMENT IN EARLY CHILDHOOD.

With roots in Piaget's theorizing, a constructivist-interactionist approach to the study of development in infancy and early childhood will be exemplified through the findings and problems from an on-going research project. Students will formulate pertinent studies, participate in their execution, and prepare papers describing their work. Permission of the instructor required.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Uzgiris.

218. RESEARCH IN ANIMAL BEHAVIOR.

Weekly meetings in which research literature of interest to the group is reviewed, and participant's research projects are designed and evaluated. Permission of the instructor is required.
Variable credit.
Modules 1-2. Mr. Stevens, Mr. Thompson.

219. RESEARCH IN BRAIN DAMAGE AND BEHAVIOR.

Intensive investigation of the mechanisms underlying recovery of functions after traumatic injury to the central nervous system. Students will be required to participate in all phases of the research including selection of the problem, surgical procedure, behavior evaluation, and subsequent data analyses. It is expected that a paper suitable for presentation at a scientific meeting or publication will result. Students involved will be expected to share responsibility for the presentation and/or publication. Permission of the instructor required.
Full course, Modules 1-2. Mr. Stein.

220. RESEARCH IN LEARNING.

Students will participate in the design, conduct and interpretation of experimental research on problems in animal discrimination learning. Permission of the instructor required.
Variable credit.
Modules 3-4. Mr. Stevens.

226. RESEARCH IN PERCEPTUAL DEVELOPMENT.

This course involves collaboration between the instructor and students on individual research projects in perceptual development. For purposes of the course, the study of perception may include the study of sensory processes, psychophysics, the relation between perception and physical action, the relation

between perception and cognition, and the aesthetics of perception. Students may choose to study any of those areas from a developmental perspective. In the past, students have undertaken projects on: 1) the age-related development of peripheral visual acuity and its relation to visual scanning strategies, 2) the development of musical cognition and perception including a structural analysis of children's songs and a study of the relation between the formal properties of intelligence and the development of music appreciation, 3) the development of patterns of head-movement activity accompanying auditory localization, and 4) the relation between eye movements and perception of part-whole figures (e.g., beasts made of fruit). Experience has shown that the course demands considerable investment of time and that its aims are unlikely to be fulfilled in a two-module sequence. Thus, students should plan to register for at least three and preferably four modules. Course requirements include attendance at a weekly research seminar. Permission of the instructor required.
Full course, Modules 1-2.
Full course, Modules 3-4.
Full course, Module 5. Mr. Whiteside.

228. RESEARCH FROM THE ORGANISMIC-DEVELOPMENTAL PERSPECTIVE.

Theory, findings, and research problems deriving from an on-going research program—an organismic-developmental systems approach to the analysis of perceptual and other cognitive processes—will be discussed. Empirical studies on problems relevant to the research program will be formulated and conducted by individual students. Papers describing the research project will be prepared. Prerequisite: Psych 105. Permission of the instructor required.
Full course, Modules 1-2.
Full course, Modules 3-4.
Full course, Module 5. Mr. Wapner

230. THE PHYSIOLOGY OF BEHAVIOR.

A survey of current problems of Physiological Psychology including theories of brain function. Emphasis will be placed on the underlying physiological mechanisms which mediate human behavior, i.e. motivation, emotion, learning, perception, and memory. The course is constructed on a systems approach, designed to demonstrate the complex and interdependent relationship of the body and brain to behavior.
Full course, Modules 1-2. Mr. Stein.

231. COGNITIVE DEVELOPMENT.

The course critically surveys empirical findings and selected theoretical viewpoints (especially Piaget's) in the areas of perceptual development, development of scientific concepts, of logic and of language. The relations between cognitive development and, respectively, language and culture, are examined and discussed in connection with the theories surveyed. Active participation from students is encouraged. Permission of the instructor required.
Full course, Module 5. Ms. Falmagne

240. DEVELOPMENTAL APPROACHES TO BEHAVIOR.

A critical examination of presuppositions, methods, concepts, and empirical inquiries of those concerned with the development of behavioral systems. Implications of developmental conceptualization for all of the life sciences will be discussed. Psychological theories of Freud, Piaget, and Werner will be given special emphasis. Permission of the instructor required. Also listed U.P. 240.
Full course, Modules 1-2. Mr. Kaplan.

241. SEMINAR IN INDIVIDUAL DIFFERENCES IN COGNITIVE FUNCTIONING.

An examination of the evidence for and explanation of individual differences in cognitive functioning and personality. Particular attention is given to the role of socio-cultural factors in cognitive functioning. Permission of the instructor required.
Full course, Modules 3-4. Ms. Uzgiris.

245. CONCEPTS IN LEARNING THEORY.

Some persistent problems in the field of learning are examined. Examples of such problems are the question of the universality of laws of learning, differentiating between non-associate (motivational) and associative factors, and species differences. Psych 130 provides desirable perparation for this course.
Full course, Module 5. Mr. Stevens.

246. PRINCIPLES OF BEHAVIORAL EVOLUTION.

From a broad survey of the social systems of animals, this course will attempt to distill the general principles that have directed the evolution of animal behavior. Also listed Biology 246.
Full course, Modules 3-4. Mr. Thompson.

247. SOCIAL DEVELOPMENT FROM INFANCY THROUGH ADOLESCENCE.

An examination of theories and research dealing with the process of socialization in the first two decades of life. Topics to be emphasized include: attachment, imitation, role taking, and the development of social identity.
Full course, Module 5. Mr. Damon.

248. CONCEPTS IN THEORIES OF PERSONALITY—NORMAL AND ABNORMAL.

Consideration and a critical analysis of: 1) concepts and issues in theories of personality, and 2) concepts used to account for deviant behavior. Prerequisite: Psych 172, 173.
Full course, Modules 1-2. Mr. Wiener.

249. PSYCHOLOGY OF DEATH.

Beliefs and actions regarding death in diverse social contexts and cultures. Permission of the instructor required.
Full course, Modules 1-2. Mr. Bibace.

250. COMMUNICATION: VERBAL AND NONVERBAL.

1) An analysis of the term communication and 2) a study of the varieties in communication patterns for different populations.
Full course, Modules 3-4. Mr. Wiener.

251. CURRENT CONCEPTS IN MENTAL HEALTH: THEORY AND PRACTICUM.

Students will participate in mental hospitals, mental retardation centers, or other agencies. This practicum experience will be integrated through the use of theoretical concepts articulated in the academic prerequisites to this course. A diary of the practicum experiences and a paper will be required. Prerequisites: Psych 101, 162, 172, 173. Permission of the instructor required.
Full course, Module 5. Mr. Bibace.

253. SEMINAR IN REHABILITATION.

Psychological problems in everyday life situations, such as problems of the physically disabled, mentally retarded, the aged, the poor, etc. will serve as topics. The primary focus is on interpersonal relations and their importance for environmental changes. Limited to 20. Corequisite: Psych 214.
Full course, Modules 1-2. Ms. Dembo.

255. PSYCHOLOGY OF MUSIC.

An examination of the physics of musical sound, the structure and function of the auditory system, the history of music with special reference to the evolution of scales, and the development of musical tastes, historically and ontogenetically. Limited to 15.
Full course, Modules 1-2. Mr. Whiteside.

256. PRIMATE SOCIAL BEHAVIOR AND HUMAN EVOLUTION. Not offered, 1974-75.

The study of the social behavior of monkeys and apes highlights central problems in psychological, zoological, and anthropological approaches to behavior. It also has important implications for the past evolution and present nature of man's sociality.
Mr. Thompson.

257. ADVANCED PRACTICUM IN PHYSIOLOGICAL PSYCHOLOGY.

Not offered, 1974-75.

A tutorial course available to students who desire to develop expertise in methods appropriate for the study of brain mechanism and behavior. The goal of the course will be to provide the student with the technical capacity to carry out individual research projects in which it may be necessary to perform surgery, prepare and carry on histological examinations, analyze electrophysiological data, etc. Project meetings and workshops in specialized areas will also be available. Permission of instructor required.
Mr. Stein.

260. THE HISTORY AND PRESENT STATUS OF INSTINCT. Not offered, 1974-75.

It has long been argued and long contested that man and animal alike are guided in their social behavior by innate tendencies. This offering will emphasize the devious and irrational course of progress in a scientific field of study so loaded with social and philosophical implications. Permission of the instructor required.
Mr. Thompson.

261. HUMAN NEUROPSYCHOLOGY.

Beginning with the neorological basis of behavior and neurobehavioral abnormalities, the field of cortical function is surveyed from the clinical, theoretical, and experimental viewpoints. Topics covered include aphasia, cerebral dominance, memory and its disorders, organic disorders of perception and emotion; methods used in clinical and experimental study. Offered Modules 1-2 and continued through Modules 3-4.

Full course, Modules 1-2.
Full course, Modules 3-4. Mss. Kaplan, Oscar-Berman, Messrs. Benson, Butters, Cermak, Goodglass, Howes, Rosen and Zurif.

262. INFORMATION PROCESSING — MEMORY AND PERCEPTION.

Not offered, 1974-75.

Models of normal information processing and their application to neurologically impaired perceptual and mnemonic processes will be reviewed. An attempt will be made to show how different neurological disorders represent failures at distinctive stages of information processing. Clinical materials related to visual object agnosia, constructional apraxia, and various amnesic states will be presented and discussed in detail. Emphasis will be placed upon a critical examination of the theoretical and experimental investigations of Luris, Teuber, Talland, and Milner.

Ms. Oscar-Berman, Messrs. Butters and Cermak.

263. CLINICAL SEMINAR—LANGUAGE DISORDERS.

Not offered, 1974-75.

A patient with aphasia will be studied in depth each week on the basis of neurological and behavioral background data and testing, to be assigned in rotation to each qualified member of the class, with supervision by the instructor. Class session will include interview with patient and integrated interpretation of data from all sources.

Mr. Goodglass and Ms. Kaplan

264. CLINICAL SEMINAR—NON-LANGUAGE DISORDERS.

A patient with neurobehavioral disorders other than aphasia will be studied in depth each week on the basis of neurological and behavioral background data, plus testing to be assigned in rotation to each qualified member of the class, with supervision by the instructor. Cases studied will include disorders of memory, perception, visuo-spatial ability, body image. Class session will include interview with patient and integrated interpretation of data from all sources. Limited to 12. Permission of the instructors required.

Full course, Modules 1-2. Mr. Goodglass; Ms. Kaplan.

265. INFORMATION PROCESSING—LANGUAGE.

The phenomena of aphasia, alexia, and associated disorders of language will be considered in relation to theories of the storage and processing of verbal information. Relevant models dealing with phonology, word selection, syntax, and semantics will be discussed. Attention will be given to the special problems of using psychological theories based on experimental data from normal subjects to account for findings with brain-damaged patients.

Full course, Modules 1-2. Messrs. Howes and Zurif.

266. CEREBRAL DOMINANCE SEMINAR.

The distinctive roles of the left and right hemispheres in man will be reviewed, first by examining alterations in language and nonverbal behavior under conditions of unilateral brain damage and section of the corpus collosum. A second approach will involve the examination of techniques used to investigate hemispherical functional asymmetry in the normally intact brain. Special attention will be devoted to hemispheric asymmetry in relation to different levels of language processing.

Full course, Modules 3-4. Messrs. Goodglass and Zurif.

270. SEMINAR—ADVANCED TOPICS IN SOCIAL PSYCHOLOGY.

Intensive treatment of selected areas in social psychological research and theory, including consistency theories in attitude formation and in interpersonal perception; attribution theory in self-perception; social/situational determinants of normal, everyday behavior, and of anti-social behaviors such as violence, criminality, and riots. Permission of the instructor required.

Full course, Modules 3-4. Mr. Laird.

271. SEMINAR IN VISUAL PERCEPTION.

Examination of the logic underlying the visual perception of objects. Permission of the instructor required.

Full course, Modules 3-4. Mr. Rankin.

272. PIAGET'S THEORY OF OPERATIONAL DEVELOPMENT: THE LOGIC OF GROUPS AND GROUPING.

A serious look at Piaget's use of algebraic models in his description of advanced levels of reasoning. The child's development of logical operations, and the organization of these operations into groupings and groups, will be studied in relation to the child's attempt to master difficult mathematical and physical conceptions. Discussions will attempt not only to clarify the specifics of Piaget's theory, but will also consider the extent to which the use of algebraic structures aids the search for a formal analysis of the child's developing cognitive abilities. Permission of the instructor required.

Half course, Module 4. Mr. Damon.

273. SEMINAR IN PERCEPTUAL AND AESTHETIC DEVELOPMENT.

Not offered, 1974-75.

In this course the approaches to perceptual development taken by Helmholtz, Hebb, Piaget, and certain contemporary Soviet psychologists are studied and an attempt is made to see how each might be extended to provide a theoretical framework with which to study age-related changes in artistic taste and aesthetic appreciation.

Mr. Whiteside.

275. ROLE TAKING AND MORAL JUDGMENT.

Theoretical conceptualizations of the phenomenon of role taking will be critically evaluated. The relation of perspectivism to progressive cognitive change will be discussed. Moral judgment will be viewed as one type of role taking process. Permission of the instructor required.

Full course, Modules 1-2. Mr. Damon.

276. SYMBOLISM IN EVERYDAY LIFE: LANGUAGE, DREAMS, MYTHS, LITERATURE, AND SCIENCE.

A critical examination of various theories of symbol-formation with special emphasis on the origins, structure, and functions of dreams and myths. The relation of dream formation to psychopathology and the recent work on the physiological bases of dreaming will also be discussed. Permission of the instructor required. Also listed U.P. 276.

Full course, Modules 4. Mr. Kaplan

277. FORMAL MODELS FOR PSYCHOLOGY AND THE SOCIAL SCIENCES.

Not offered, 1974-75.

Ms. Falmagne.

280. CURRENT PROBLEMS IN CHILD PSYCHOLOGY.

Not offered, 1974-75.

Specific aspects of child behavior will be studied through analysis of the current research literature in the field. Familiarization with current concerns of the field, the historical roots of these concerns, as well as with various literature sources will be the aim of the seminar. Permission of the instructor required.

Ms. Uzgiris.

285. FUNCTIONS OF THE DIFFERENT EMOTIONS.

Following the rules of "Conceptual Confrontation" we will attempt to explicate a different function for each emotion in a way that systematically relates the emotions named in the English language. Permission of the instructor required.

Full course, Modules 3-4. Mr. deRivera.

286. SEMINAR IN INTERPERSONAL RELATIONS.

Value problems pertaining to interpersonal relations will be discussed, including value possessions, value losses, regaining of values, and adjustment to value losses. Limited to 20. Corequisite: Psych 213. Prerequisite: Psych 253.

Full course, Modules 3-4. Ms. Dembo.

287. PHILOSOPHICAL PROBLEMS IN PHYSIOLOGICAL PSYCHOLOGY.

Not offered, 1974-75.

Mr. Stein.

289. SELECTED PROBLEMS IN PHYSIOLOGICAL PSYCHOLOGY.

Not offered, 1974-75.

Mr. Stein.

296. DIRECTED RESEARCH IN PSYCHOLOGY.

Independent study for qualified students not in the honors program. Prerequisite: approval of department chairperson.
Variable credit.
Modules 1-2-3-4-5. Staff.

297. DIRECTED READINGS IN PSYCHOLOGY.

Independent study for qualified students not in the honors program. Prerequisite: approval of department chairperson.
Variable credit.
Modules 1-2-3-4-5. Staff.

299. HONORS IN PSYCHOLOGY: SENIOR YEAR.

Students will carry out a research project under the direction of a member of the staff.
Variable credit.
Modules 1-2-3-4-5. Staff.

300. PRO-SEMINAR DEVELOPMENT PSYCHOLOGY.

A seminar devoted to the presentation and critique of different developmental approaches to the individual and his ways of functioning in the world. Among the approaches considered are 1) learning theory as well as information processing, 2) Piagetian, 3) organismic-developmental, and 4) Freudian and neo-Freudian. The aim of the seminar is to acquaint the participants with sympathetic expositions of diverse points of view and the application of these viewpoints to empirical inquiry. It will thus provide a basis for subsequent discussions in other seminars of the various ways of dealing with substantive issues (e.g., learning, moral action and moral judgment, language behavior, the processes of thinking). Several faculty members and advanced graduate students will participate in conducting the seminar, each module of which will be devoted to the examination of one theoretical approach.
Variable credit.

Module 1-1.	Ms. Falmagne, Ms. Uzgiris, Mr. Kaplan.
Module 2-2.	Mr. Bibace, Mr. Damon, Mr. Whiteside.
Module 3-3.	Mr. Damon, Ms. Falmagne, Mr. Whiteside.
Module 4-4.	Mr. Bibace, Mr. Kaplan, Ms. Uzgiris.

301. EXPERIMENTAL METHOD IN PSYCHOLOGY.

During Module 1, the faculty will present their own research with an emphasis on the special features of methodology they employ, including the links between method, theory, problems, and findings. During Module 2, a variety of special problems in experimental methods will be treated. During Modules 2, 3, and 4, there will be informal ad hoc individual or group meetings in which students will present proposals for their MA theses. At the end of Module 4, the student will submit a written report which covers the status of the student's research.
Variable credit.
Modules 1-2, 3-4. Mr. Wapner.

302. STATISTICAL METHODS.

Descriptive statistics, statistical inference and experimental design in psychology.
Variable credit.
Modules 1-2, 3-4. Mr. Rankin.

307. PHYSIOLOGICAL PSYCHOLOGY: ADVANCED.

Not offered, 1974-75.

A survey of current problems, theories and controversies in physiological psychology. Course orientation will be similar to the introductory course with more attention to critical experiments and controversies. Also considered will be the neuroanatomy and neurophysiology of important CNS structures. Prerequisite: some knowledge of experimental methods in psychology.
Mr. Stein.

308. RESEARCH PROBLEMS IN PHYSIOLOGICAL PSYCHOLOGY.

An advanced course in research methodology including surgical and stereotaxic techniques, histology, EEG recording and analysis and general methods for animal care. Permission of the instructor required.
Modules 1-2. Mr. Stein.

311. CLINICAL METHODS I.

Modules 1-2: Psychology 311, offered in the first two modules each year, meets twice a week. One session is held at Westboro State Hospital, where students administer psychodiognostic tests to hospital patients (adults) under supervision; the other session is held at Clark, where the class analyzes protocols, prepares reports, talks about the nature and uses of psychodiagnostic tests, etc. The focus is almost entirely on diagnosis in the cognitive realm, by means of the Wechsler Adult Intelligence Scale, the Bender Visual Motor Gestalt Test, the Wechsler Memory Scale, the Goldstein Blooks, Color-Form Object Sorting Tests.

Modules 3-4: Psychology 311. The class meets once a week with some additional individual meetings for supervision. The course introduces the student to the interpretation of symbolic activity occurring through projective techniques, mainly inkblot interpretation and thematic apperception tests. Though the techniques are introduced in traditional fashion, individual differences in performance are assessed from a developmental perspective. Students test patients at Westboro State Hospital, so that the course is also an introduction of the student to the hospital setting and to the behavior of individuals judged 'pathological'. There is some observation of patients in the dayroom as well as in the testing situation.

Variable credit.
Modules 1-2. Mr. Baker, Mr. Cirillo.
Modules 3-4. Staff.

312. PSYCHOPATHOLOGY.

Introduction to Psychopathology: directly through naturalistic observation and interviews with seriously disturbed individuals; indirectly through clinical and experimental reports related to description and explanation in psychopathology. A paper on some specific psychopathological phenomenon (e.g., delusions, hallucinations) will be required.

Variable credit.
Modules 3-4. Mr. Bibace.

313. PRINCIPLES AND CONCEPTS UNDERLYING PSYCHOLOGICAL TESTS.

Not offered, 1974-75.

Theory and problems of psychological measurement with special reference to psychological tests.

Mr. Laird.

315. ADVANCED CHILD PSYCHOLOGY.

Discussion of conceptions and current research pertaining to some questions in the general area of human development in the early childhood years, such an imitation-identification, exploration and play, temporal organization of actions, etc.

Variable credit.
Modules 3-4. Ms. Uzgiris.

317. BEHAVIOR IN INFANCY.

Not offered, 1974-75.

The seminar will proceed from an examination of the capacities for functioning in the neonate to a consideration of the changes in those capacities during ontogenesis with a view toward understanding the infant's organization of his functioning in the world.

Ms. Uzgiris.

319. ADVANCED SEMINAR ON ORGANISMIC-DEVELOPMENTAL APPROACHES TO BEHAVIOR.

Basic categories of the organismic-developmental approach to life sciences, with examination of the application of these categories to a wide range of problem areas in psychology.

Variable credit.
Module 4. Mr. Kaplan.

320. ADVANCED SEMINAR IN GENETIC-STRUCTURAL THEORIES.

Not offered, 1974-75.

In this seminar, the major catagories of all genetic-structural developmental theories (Freud, Warner, Piaget, et al) and the concepts and methodologies specific to different theories will be thoroughly examined and critically analyzed. This is an ongoing seminar comprised of advanced graduate students and including interested faculty. The seminar deals with the systematic roles of such concepts as "development", "structure", "regression", "system", "stage", etc.

Mr. Kaplan.

322. PSYCHOLOGY OF LEARNING.

Theoretical viewpoints and experiments in the field of learning.

Variable credit.
Modules 1-2. Mr. Stevens.

324. THEORIES OF PERSONALITY I: ISSUES IN THE PHILOSOPHY OF PSYCHOLOGY.

This course covers three areas: 1) discussion of the philosophical bases of "theories" of personality; 2) consideration of some of these issues in different theories (e.g., Freud, Kelly, Dollard, and Miller); and 3) presentation and discussion of an alternative framework.
Variable credit.
Modules 1-2. Mr. Wiener.

325. THEORIES OF PERSONALITY II: EXPLORATION OF EXEMPLAR THEORIES OF PERSONALITY.

Variable credit.
Module 5. Mr. Wiener.

326. SELECTED PROBLEMS IN SOCIAL PSYCHOLOGY.

An advanced course in social psychology, in which concern is equally divided between theory and research methodology. Students will become acquainted with the literature relevant to a number of problems in the area, become proficient in the necessary techniques, and exercise these competences by frequent conduct of appropriate empirical investigations. Permission of the instructor required.
Variable credit.
Modules 1-2, 3-4. Mr. Laird.

329. INTRODUCTION TO INTERVIEWING.

Variable credit.
Module 1. Mr. Bibace.

331. CLINICAL METHODS II.

Practicum devoted to clinical experiences primarily with children. This includes intelligence and projective testing; diagnostic interviewing and play therapy with children. Students are supervised by Dr. Clottone and other members of the Providence Child Guidance Clinic staff. Supervision either through graduate students or through direct observations and tape recordings. On alternate weeks, there is an evening meeting with Dr. Clottone devoted to conceptualizing questions raised through the clinical activities. Students currently spend one day per week at the Child Guidance Center.
Variable credit.
Modules 1-2-3-4. Mr. Ciottone.

332. THEORIES OF PSYCHOTHERAPY.

Comparison of various theoretical approaches to psychotherapy.
Variable credit.
Modules 3-4. Mr. Wiener.

333. FROM COGNITIVE PSYCHOLOGY TO GENETIC EPISTEMOLOGY.

Not offered, 1974-75.

The course will be a sort of meditation on the growth of knowledge. Special attention will be given to questions such as: present decline of absolutes in science; epistemologic threshold of the theory of explanation; forms of knowledge and their interface. Limited to students with a previous familiarity with the theories of Piaget and/or Werner.
Mr. Voneche.

334. SEMINAR IN BEHAVIOR AND EVOLUTION.

A consideration of selected contemporary issues in the phylogeny and ontogeny of behavior in general and social behavior in particular.
Variable credit.
Modules 3-4. Mr. Thompson.

335. PRAXIOLOGY.

Not offered, 1974-75.

A study of human action seen from the standpoint of efficiency and as such unifying various domains like: body techniques, technology, crafts, ethics, social action, literature, and religion.
Mr. Voneche.

336. GENESIS OF THOUGHT AND ACTION.

Not offered, 1974-75.
Mr. Voneche, Mr. Kaplan.

337. SEMINAR ON REASONING.

Not offered, 1974-75.

The central theme is an examination of the notion of logical competence and its alternatives, both from a definitional point of view and in connection with the experimental data on reasoning. Starting from a review of the current literature on reasoning, the seminar will then explore the reciprocal relationships between logic and imagery, and logic and language. Various conceptions of logical competence will be discussed and related to the analogous issues in the psycholinguistics field.

Ms. Falmagne.

338. CONCEPTIONS OF PERSON.

Examination of research and theory in the areas of self concept and of person perception with a focus on relationship between the two.
Variable credit.
Modules 1-2. Mr. Laird.

339. SEMINAR ON THE EFFECTS OF EARLY EXPERIENCE.

Not offered, 1974-75.

An examination of recent evidence pertaining to the effects of various circumstances during early ontogenesis on the course of cognitive and motivation development aimed at conceptualizing these effects within a coherent framework.

Ms. Uzgiris.

340. PHENOMONOLOGY OF INTERPERSONAL RELATIONS.

Interpersonal phenomenon will be systematically examined with the methodology of "conceptual confrontation".
Variable credit.
Module 2. Mr. deRivera.

342. CHEMICAL COMMUNICATION.

A seminar dealing with the role of pheromones in mammalian behavior.
Variable credit.
Modules 3-4. Mr. Stevens.

348. SOCIAL PSYCHOLOGICAL PERSPECTIVES ON PROBLEMS OF ADJUSTMENT.

Not offered 1974-75.

Examination of "deviant" behavior as a socially defined phenomenon, including attention to the process of attitude and belief formation ahd change; attribution of characteristics to the self and others; "cognitive" influences on motivation and emotions; socialization of children and adults; and the role of the deviant in society. Consideration of implications of these topics for behavioral change.

Mr. Laird.

351. CLINICAL METHODS III.

Practica in consultation. Currently graduate students can enroll in one or more of three practica devoted to consultation: consultation with nursing clinicians and team leaders at Hahnemann Hospital (Thursday mornings 10-11:30); clergy from Worcester and surrounding areas (at Clark, Friday 8:30-10:00); and teachers in a school for disturbed boys (Judge Baker Guidance Center, Thursdays 3:15-4:30). In addition to these group meetings with the relevant group of consultees (nurses, clergy, teachers), the graduate student, acting as the consultant, sets up mutually convenient times for meeting with the consultee. The framework for interpretation and action is the organismic-developmental approach. More specifically, the student will be required to demonstrate competence in carrying out a structural (part/whole) and functional (means/ends) analysis of the issues in a specific case.
Variable credit.
Modules 1-2-3-4. Mr. Bibace.

352. CLINICAL METHODS IV.

Supervised experience in diagnostic interviewing in the Psychological Services Center.
Variable credit.
Modules 1-2, 3-4. Mr. Baker, Mr. Cirillo.

357. SYMBOLIC BEHAVIOR.

Not offered, 1974-75.

A seminar focusing on the problem of representation of symbolization, with special attention to the representation of abstract or "intangible" conceptions (meanings) in concrete objects, events, patterns, etc. The seminar will concern itself with the developmental process by which individuals represent meanings in dreams, political cartoons, spatial arrangements, material structures and finally linguistic forms. Emphasis throughout will be on research into symbolic representation.

Mr. Kaplan.

360. SEMINAR: CURRENT APPROACH TO THINKING I.

The seminar is aimed at providing an introduction to a number of contemporary, increasingly influencial, approaches to thinking, in particular: 1) computer simulation of problem-solving, memory, language comprehension; 2) recent Soviet work on thought and inner speech; 3) psychological and linguistic approaches to reasoning and semantics. The format will be study, presentation and discussion of selected significant writings in their areas, an additional "directed readings" arrangement could also be worked out optionally. The attribution of these topics to Part I of the Seminar (360) or to Part II (361) will be done at an early organizational meeting in September, according to the interests of students wishing to participate in 360, 361, or both (participation to both seminars is encouraged, but not required).
Variable credit.
Module 1. Ms. Falmagne.

361. SEMINAR: CURRENT APPROACH TO THINKING II.

Refer to description under Psychology 360.
Variable credit.
Module 2. Ms. Falmagne.

380. RESEARCH IN PSYCHOLOGY.

Direction of individual students in their research.
Variable credit.
Modules 1-2-3-4. Staff.

381. READINGS IN PSYCHOLOGY.

Critical analysis of literature in areas related to individual research.
Variable credit.
Modules 1-2-3-4. Staff.

385. PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER I.

Variable credit.
Modules 1-2, 3-4. Mr. Baker and Clinical staff: Mr. Bibace, Mr. Cirillo, Mr. Wiener.

386. PARTICIPATION OF PSYCHOLOGICAL SERVICES CENTER II.

Variable credit.
Modules 1-2, 3-4. Mr. Baker and Clinical staff: Mr. Bibace, Mr. Cirillo, Mr. Wiener.

387. PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER III.

Variable credit.
Modules 1-2, 3-4. Mr. Baker and Clinical staff: Mr. Bibace, Mr. Cirillo, Mr. Wiener.

388. PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER IV.

Variable credit.
Modules 1-2, 3-4. Mr. Baker and Clinical staff: Mr. Bibace, Mr. Cirillo, Mr. Wiener.

PHYSICS

DEPARTMENT FACULTY

Roger P. Kohin, Ph.D., Associate Professor of Physics, Department Chairman
Roy S. Andersen, Ph.D., Professor of Physics
Michael McClintock, Ph.D., Visiting Professor of Physics
John A. Davies, Ph.D., Associate Professor of Physics
Harvey A. Gould, Ph.D., Associate Professor of Physics*
Christoph Hohenemser, Ph.D., Associate Professor of Physics
Roger P. Kohin, Ph.D., Associate Professor of Physics
Joseph P. McEvoy, Ph.D., Associate Professor of Physics*
Thomas Bergstresser, Visiting Assistant Professor of Physics
Albert M. Gottlieb, Ph.D., Assistant Professor of Physics

Affiliated Faculty
Thomas H. Keil, Ph.D., Affiliate Associate Professor of Physics.

*On leave of absence, 1974-75.

The Department of Physics provides undergraduate and graduate courses which can be combined to meet a variety of student interests and needs. Formal classes (excluding readings and special topics) fall into six classes, as given below.

TYPES OF COURSES OFFERED

(1) Courses for the non-scientist. These require high school algebra and geometry. They are designed to acquaint the student with the nature of scientific inquiry and to inform the student of the impact of science in the contemporary world. Included in this class are Physics 1 and 2. Also included is Astronomy 1.

(2) Core undergraduate courses. This is a sequence of three one year courses emphasizing phenomena of physics. The first year requires no calculus, and the second and third year are taught at the level of elementary calculus. The core curriculum is designed to meet the needs of General Physics majors and Technology and Man majors. Included in the sequence are Physics 11, 111, and 161.

(3) Core pre-professional courses. A sequence of three undergraduate courses paralleling the core undergraduate courses but designed for the pre-professional science major. This sequence includes Physics 12, 112 and 162. After the first year, students attend the lectures of the core undergraduate courses but a substantial part of the work is conducted in weekly tutorials in which the subject matter is explored in greater depth using more sophisticated mathematical techniques. These courses prepare the student for further work in physics at the advanced undergraduate-graduate level. Students in these courses must be prepared to work independently.

(4) Laboratories. A sequence of ten modules of laboratory designed to meet the needs of all types of students. Included are Physics 19, 119.1, 2 and 219.2. Laboratory work beyond these courses may be taken in the form of research participation as Physics 231 or 232.

(5) Advanced undergraduate courses. Courses beyond the three year core-sequence that are at the beginning graduate level. They are designed for undergraduate science students, particularly physics majors, who intend to enter graduate school. Included are Physics 201, 205, and 209.

(6) Graduate courses. Graduate courses fall into two classes, basic and advanced. The basic graduate courses, required for the Ph.D., are Physics 301, 305, 309, and 310. Advanced courses include Physics 311, 312, 313, 314, and 320. Most graduate courses are given in alternate years.

UNDERGRADUATE MAJOR OPTIONS

A. General Physics

This is a major intended for students who wish to study physics solely as a liberal art, and who do not intend to enter graduate school. It allows maximum opportunity for electives in other fields. It is suitable as a preparation for teaching, business, and a variety of professional schools. The minimum requirements for this major are Physics 11, 19, 111, 161, Mathematics 13, and 3 additional elective courses from science, mathematics, and computer science. A student may replace a required course with an appropriate more advanced course with the approval of the Department Undergraduate Advisor.

B. Technology and Man - Physics Option

This is a major intended for students who are interested in careers that deal with the interface between science and society. Details of the program are given elsewhere in this catalog, under the title Technology and Man. Students choosing the Physics option under the program are advised to select Physics 11, 19 or 119.1, 111, and 161.

C. Physics

This is a standard, pre-professional program intended for those who plan graduate study in physics or an allied science. The program requirements are 8 full courses in physics beyond Physics 12 and 19 (normally including 112, 162, and 119.1, 2). In addition, the student is urged to take one year of chemistry and one additional year of mathematics at an advanced level. With permission of the Department Undergraduate Advisor, a first year student with a sound background in physics may be admitted to Physics 111 or 112. This procedure will permit completion of the requirements for the major by the end of the junior year, and leaves the senior year open for independent study and/or honors.

UNDERGRADUATE HONORS

A qualified undergraduate in any of the major options above is encouraged to participate in the Physics Honors Program. During the junior and senior year, the Honors student conducts an experimental or theoretical research project under the guidance of a faculty member. This work is submitted to the Department as an Honors Thesis. Recommendation for a degree with Honors in Physics is determined by the quality of the thesis, and the performance of the student in an oral defense of his thesis. An

Honors candidate must maintain an average of B- in physics, chemistry, and mathematics courses.

GRADUATE PROGRAM

The Department of Physics offers the M.A. and Ph.D. degrees in Physics, and jointly with the Department of Chemistry, a Ph.D. in Chemical Physics. Departmental research is concentrated in the experimental and theoretical study of condensed matter with emphasis on phase transitions.

At entrance, graduate students are given a placement examination which tests their knowledge of undergraduate physics. A student failing this examination may be required to take a remedial program before entering fully on the graduate program, and may be asked to fulfill the requirements of the M.A. degree before proceeding to the Ph.D.

To receive the Ph.D. the student must satisfy the University residence and course requirements, pass with B or better the basic graduate courses Physics 301, 305, 309, and 310, and six modules of Physics 303. To qualify for Ph.D. research, the student must pass four oral examinations in the subject matter of the basic graduate courses, and an additional comprehensive oral examination. The student must also pass at least one graduate course in a subject other than physics, demonstrate literacy in a foreign language and computer programming, and complete a dissertation based on an original piece of research. Students entering with an advanced standing and transferable credit are encouraged to demonstrate their proficiency in core graduate courses through examination.

To receive the M.A. the student must satisfy the University residence and course requirements, pass four semesters of the basic graduate courses, Physics 301, 305, 309 and 310 and one semester of Physics 303, and pass two related oral examinations. He must also complete a thesis based on an original piece of research.

Those interested in further information on research opportunities in the Department should request the brochure "The Graduate Program and Research in Physics at Clark." Those desiring more detail on graduate requirements and their timing should request a copy of "The Physics Graduate Student Handbook." Both are available from the Chairman of the Department.

Applicants for admission should know that various forms of financial aid are available, and that the Department considers provision of such aid an important responsibility. Application forms for admission and financial aid may be requested from the Chairman of the Physics Department.

COURSES

Astronomy 1. EXPLORING THE UNIVERSE.

Refer to description under Astronomy.

Mr. Andersen.

Physics 1. PHYSICS FOR ARTISTS, POETS, AND PHILOSOPHERS.

A two-module introduction to the history, methodology and achievements of physics with an appreciation of its social and cultural influences. The course will stress modern ideas of space and time, Einstein's theory of relativity, current theories of cosmology, and quantum theory. Mathematical tools necessary are high school algebra and geometry. Three class meetings and one laboratory per week for one course credit. Open to freshmen.

Full course, Modules 3-4. Mr. Davies.

2. THE PHYSICS OF EVERYDAY EXPERIENCE.

A two-module introduction to the basic physical concepts necessary for a fundamental understanding of our everyday observations of the physical world, and the nature of discovering, reasoning, and concept-formation in the physical sciences. Topics will include the physics of hearing and seeing, matter in motion, heat, electricity and magnetism, the nature of matter, and a study of man's place in the physical universe. The course is directed towards the non-scientifically oriented student. Although recent advances in science and technology will be discussed, the emphasis in Physics 2 is a fundamental understanding of everyday experience in contrast to Physics 1 in which the emphasis is on developments in physics in the 20th century. Three lectures per week plus an open, informal laboratory. One course credit.

Full course, Modules 3-4. Mr. Gottlieb.

11. INTRODUCTORY PHYSICS.

A non-traditional, introductory course designed for students majoring in science. Stresses simplicity and self-consistency of physical models and mathematical laws in explaining a variety of phenomena. Topics will include statistical physics, relativity and quantum physics in addition to mechanics, electricity and magnetism. Although calculus is not a prerequisite, Physics 11 is a rigorous and challenging preparation for advanced courses in the sciences. Together with Physics 19 Laboratory (see below) it satisfies the requirements for majors in General Physics, Biology, Chemistry, and Technology and Man. Three 50-minute lectures

per week plus a discussion once a week for two course credits. Four modules long, the first two modules are repeated in module five.
Full course, Modules 1-2.
Full course, Modules 3-4.
Full course, Module 5. Mr. Kohin.

12. INTRODUCTORY PHYSICS.

An introductory course for science majors and others who require a mathematically complete approach to the material and who expect to continue their study of physics beyond the introductory year. Problem solving is emphasized and independent work by the student is expected. Three lectures and one tutorial per week during modules 1-4 for two course credits. Credit for both Physics 11 and 12 is not granted.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Andersen.

19. INTRODUCTORY LABORATORY.

A laboratory course designed to accompany Physics 11. Emphasis on physical measurements, techniques, and the ideas of applied mathematics needed to interpret them. One meeting per week throughout modules 1-4. Co-requisite: Physics 11 or 12. One-half course value.
One-quarter course value, Modules 1-2. Mr. Kohin
One-quarter course value, Modules 3-4. Mr. Hohenemser.

111. INTERMEDIATE PHYSICS.

A second course in physics of four modules' duration, designed to follow Physics 11. It is intended for the general student interested in the concepts, methods, and applications of physics, and satisfies the requirements of the Program on Technology and Man. The course presumes mathematics at the level of elementary calculus, and will develop other mathematical tools as needed. Topics covered are electricity and magnetism, wave and optical phenomena, thermodynamics, and kinetic theory. Applications to man-technology problems. Open to freshmen with consent of the Department Undergraduate Advisor. Co-requisite: Mathematics 12. Two course credits.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Gottlieb.

112. INTERMEDIATE PHYSICS.

A second course in physics for science majors, designed to follow Physics 12. The subject matter and general lectures are the same as Physics 111. Over half of the work is conducted in relation to tutorials in which the subject matter is explored in greater depth. The student should be prepared to work independently. Co-requisite: Mathematics 13; Prerequisite: Physics 12 or permission of the Department Undergraduate Advisor. Credit for both Physics 111 and 112 is not granted.
Full course, Modules 1-2. Mr. Gottlieb
Full course, Modules 3-4. Mr. Kohin.

119.1. ELECTRONICS LABORATORY.

An introductory laboratory course in electronics, the goal of which is to build and understand several simple circuits using discrete as well as integrated solid state elements. The course will begin with fundamentals of AC and DC circuit theory, and the use of basic test instruments such as oscilloscopes. Special emphasis will be given to logic circuitry and operational amplifier techniques. The course may replace Physics 19 as an introductory laboratory for those who are qualified. Two laboratories per week during modules 1-2. Open to freshmen with consent of instructor.
Full course, Modules 1-2. Mr. Gottlieb.

119.2. PHYSICAL INSTRUMENTATION LABORATORY.

An introduction to modern physical research instrumentation. The course will involve each student in one or more projects. The student will be expected to design, build, and assemble the experimental apparatus, using his background in electronics. Departmental facilities such as the machine shop and the electronics stockroom will be available. The course will emphasize measurements on fundamental particles, such as protons, muons, gamma rays, electrons, and positrons. One lecture and two laboratory periods per week modules 3 and 4. Prerequisite: Physics 119.1 or equivalent.
Full course, Modules 3-4. Mr. Andersen, Mr. Gottlieb.

161. ATOMIC AND NUCLEAR PHYSICS.

A third course in physics, designed to follow Physics 111. It is intended for the general student who wishes to learn in detail about the structure of atoms and nuclei. To achieve its goal, the course will include an introduction to quantum mechanics. The course presumes mathematics at the level of elementary calculus, and will develop other mathematical tools as needed. Applications to the problems of energy technology and environmental radiation will be given. Duration: four modules. Prerequisite: Physics 111, Mathematics 12.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Bergstresser.

162. ATOMIC AND NUCLEAR PHYSICS.

A third course in physics for science majors, designed to follow Physics 112. The subject matter and general lectures are the same as Physics 161. Over half the work will be conducted in relation to tutorials in which the subject matter will be explored in greater depth. The student should be prepared to work independently. Prerequisite: Physics 112, Mathematics 13. Credit for both Physics 161 and 162 is not granted.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Bergstresser.

170. SEMINAR IN METHODS AND MATERIALS IN PHYSICS AND MATHEMATICS TEACHING.

Not offered, 1974-75.

This course is identical to Mathematics 150 with additional laboratory experiences in physics. The course is designed for students seeking certification for high school teaching in physics through the Department of Education. Offered Modules 1-2-3-4 for two course credits for the year. Cross listed as Education 170.
Mr. Tepper and Mr. McEvoy.

188. INDEPENDENT PROJECTS.

Variable credit.
Modules 1-2-3-4. Staff.

201. CLASSICAL THEORY OF FIELDS.

A course designed to prepare the physics major for graduate work in physics. Lectures are the same as in Physics 301, but evaluation is separate. Prerequisite: Physics 112, 162. Three quarters of a course credit for each module 1 through 4. Any module may be taken separately.
Three-quarter course value per module.
Modules 1-2-3-4. Mr. Davies.

205. QUANTUM MECHANICS.

A course designed to prepare the physics major for graduate work in physics. Lectures are the same as in Physics 305, but evaluation is separate. Prerequisite: Physics 112, 162.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. O'Neill.

209. STATISTICAL MECHANICS.

A course designed to prepare the physics major for graduate work in physics. Lectures are the same as in Physics 309, but evaluation is separate. Prerequisite: Physics 112, 162.
Full course, Modules 1-2. Mr. Narducci.

219.2. PHYSICAL INSTRUMENTATION LABORATORY.

An introduction to modern physical research instrumentation. The course is the same as Physics 119.2 except that interpretation of experiments must be at the advanced undergraduate or beginning graduate level. Undergraduates who have completed Physics 119.2 may register for 219.2.
Full course, Modules 3-4. Mr. Anderson, Mr. Gottlieb.

230. DIRECTED READINGS IN PHYSICS.

Directed readings in physics to provide the special needs not covered in regular courses.
Variable credit.
Modules 1-2-3-4-5. Staff.

231. SPECIAL PROJECTS IN EXPERIMENTAL PHYSICS.

Independent laboratory projects done under the guidance of a faculty advisor.
Variable credit.
Modules 1-2-3-4-5. Staff.

232. SPECIAL PROJECTS IN THEORETICAL PHYSICS.

Independent projects in theoretical physics done under the guidance of a faculty advisor.
Variable credit.
Modules 1-2-3-4-5. Staff.

301. CLASSICAL THEORY OF FIELDS.

An integrated year course in classical mechanics and electrodynamics. Topics covered include variational principles, canonical transformation, Hamilton-Jacobi theory, special theory of relativity, Lorentz transformations and the Lorentz group, the

stress tensor and continuous media, Maxwell's equations, electromagnetic potentials, boundary value problems, radiation theory, and self-interactions. Triple course value.
One-and-one-half course value, Modules 1-2.
One-and-one-half course value, Modules 3-4. Mr. Davies.

303. RESEARCH APPRENTICESHIP.

Direct participation in each of the experimental and theoretical research groups of the department. The student spends one module in each research group. Ph.D. students should enroll in this course for six modules, M.A. students for two modules.
One-half course value per module.
Modules 1-2-3-4-5. Mr. Hohenemser.

305. QUANTUM MECHANICS.

A comprehensive introduction to non-relativistic quantum mechanics. Topics include the superposition principle, linear vector spaces, the Schrodinger and Heisenberg pictures, symmetries, angular momentum, scattering theory, perturbation theory. Applications to atomic, nuclear, and solid state physics.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. O'Neill.

309. STATISTICAL MECHANICS.

A two module course in thermodynamics, statistical mechanics and kinetic theory at an advanced level. Topics covered include ensemble theory, density matrix, ideal gases, Fermi and Bose distributions, Debye theory, non-ideal gases, molecular field theory. Boltzmann equation, Onsager relations.
Full course, Modules 1-2. Mr. Narducci.

310. SOLID STATE PHYSICS.

Not offered, 1974-75.

A two module introduction to the quantum theory of solids. Topics covered include Born-Oppenheimer approximation, lattice dynamics, phonon spectra, electron structure of metals, insulators, and semi-conductors, transport theory.

Mr. Hohenemser.

311. ADVANCED QUANTUM MECHANICS.

Not offered, 1974-75.

A two module course including relativistic quantum mechanics, quantum electrodynamics, and the many body problem. Prerequisite: Physics 305 or equivalent.

Dr. Goloskie.

312. APPLICATION OF GROUP THEORY TO PHYSICS.

Not offered, 1974-75.

Representation theory for finite groups. Applications to crystallographic point groups. Representations of continuous impact groups; the rotation group. The Wigner-Eckart theorem and selection rules. The permutation group and its application to a system of identical particles. Classification of states of a multi-electron atom.

Mr. Davies.

313. LOW TEMPERATURE PHYSICS.

Not offered, 1974-75.

Phenomonological and microscopic theories of liquid helium - three and four, and type I and type II superconductivity. Experimental techniques at low temperature.

Mr. McEvoy.

314. THEORY OF MANY PARTICLE SYSTEMS.

The equilibrium and transport properties of many body systems are studied at zero and non-zero temperatures using the formalism of thermodynamic Green's functions. Applications are made to the electron gas, the degenerate Bose and Fermi gas, and superconductivity.
Full course, Modules 1-2. Mr. Bergstresser.

315. CRITICAL PHENOMENA.

Not offered, 1974-75.

Landau theory of second order phase transitions. Ornstein-Zernicke theory, and calculation of critical exponents. Review of recent experimental work — near magnetic gas-liquid, ferroelectric, superconducting and structural phase transitions.

Mr. Gould.

316. MAGNETIC RESONANCE SEMINAR.

Survey of current research using various resonance techniques.
One-half course credit throughout the year.
One-eighth course value per module.
Modules 1-2-3-4. Mr. Andersen.

320. ADVANCED SOLID STATE PHYSICS.

Not offered, 1974-75.

An advanced course in solid state physics emphasizing many body techniques.

Mr. McEvoy.

325. RESEARCH SEMINAR.

A student participation seminar in current research problems. One-half course value for four modules.

Half course, Modules 1-2-3-4. Mr. Bergstresser.

330. TOPICS IN EXPERIMENTAL PHYSICS.

A specific topic in experimental physics is considered at the research level. Topics are selected on the basis of current interest. Variable credit.

Modules 1-2-3-4-5. Staff.

335. TOPICS IN THEORETICAL PHYSICS.

A specific topic in theoretical physics is considered at the research level. Topics are selected on the basis of current interest. Variable credit.

Modules 1-2-3-4-5. Staff.

340. COLLOQUIUM.

Weekly invited lectures on research topics of current interest. Required for all graduate students.

No credit.

Modules 1-2-3-4. Mr. Bergstresser.

350. RESEARCH.

Variable credit.

Modules 1-2-3-4-5. Staff.

SOCIOLOGY

DEPARTMENT FACULTY

Edward E. Sampson, Ph.D., Chairman, Department of Sociology, Professor of Sociology and Adjunct Professor of Psychology

Alan E. Guskin Ph.D., Professor of Sociology and Education

Rona M. Fields, Ph.D., Associate Professor of Sociology

Stanford N. Gerber, Ph.D., Associate Professor of Social Anthropology

Sidney M. Peck, Ph.D., Associate Professor of Sociology

Robert J. Ross, M.A., Assistant Professor of Sociology

Archie Smith, Jr., Rev., Ph.D., Assistant Professor of Sociology; Associate Dean of the College

UNDERGRADUATE PROGRAM

The goals of the Sociology Department are to enable persons to obtain a *working knowledge* of the theories, concepts, methods, and findings of Sociology.

The program is conceptual and academic in that emphasis is placed upon students obtaining a thorough grasp of theoretical and methodological aspects of the discipline.

The program is problem focused and applied to the extent that emphasis is placed upon the importance of learning through involvement in ongoing, contemporary social issues and concerns.

The program is interdisciplinary and comparative, drawing materials and approaches from various social sciences. Field work and practicum courses are available to interested students in order to facilitate studies in cross-cultural theory and practice. Ethnographic experience is available in diverse cultural contexts.

The major in Sociology must take 8 courses in Sociology to be divided among:

I Introductory (Soc. 100, 105, 120)
II Theory (Soc 290a, 290b, 291a, 293, 297a, 245)
III Methods (Soc. 170, 271a)
IV Practicum (Soc. 201, 299)
V Electives (all other courses offered in Sociology)
(Note: other courses may be added to the above listing from time to time)

Majors are advised to complete their 8 courses by taking at least one introductory course, one methods course, at least one theory course, at least one term of Soc. 201 *or* 299 in their senior year and other courses in sociology to make up 8 courses.

In addition, majors must take 4 courses in related fields; by University rule, the student must take 9 courses in unrelated fields. Certain courses in Geography, Psychology, History, Government, Economics, Philosophy, and Education are considered related.

GRADUATE PROGRAM

At the present time, the Department is not accepting students for the Master of Arts degree.

COURSES

100. INTRODUCTION TO SOCIOLOGY.

This is a general introductory course to the discipline of Sociology, intended mainly for students who wish to gain a broad, general overview of the field, its areas of study, methods of inquiry and conceptions and analyses of society. Offered in Modules 1-2 and repeated in Modules 3-4.

Full course, Modules 1-2.

Full course, Modules 3-4. Mr. Peck.

105. INTRODUCTION TO SOCIAL PSYCHOLOGY.

An examination of the relationship between the individual and the social system. The theories, methods and findings of social psychology will be examined as they illuminate the major, enduring themes that confront human beings individually and collectively: e.g. the bases of knowledge and understanding; the individual and authority; freedom, reason, and responsibility; development, identity and individuality; exchange and justice, etc.
Full course, Module 1. Mr. Sampson.

120. INTRODUCTION TO SOCIAL ANTHROPOLOGY.

An analysis of primitive society with a focus on social structure. The emphasis will be upon the development of a comparative perspective. The latter part of the course will explore phenomenological and existential anthropology and its implications for understanding other cultures.
Full course, Module 1.
Full course, Module 4. Staff.

130. SOCIOLOGY OF HUMAN SEXUALITY.

A critical examination of research theory and practice in human sexuality as presented in the literature of sociology, psychology, psycho-biology, and anthropology.
Full course, Module 5. Ms. Fields.

170. SOCIOLOGICAL RESEARCH METHODS.

This course will provide a general introductory survey to various methods employed in social scientific inquiry including, for example, the sample survey, interviewing, questionnaire approaches, experimental methods, etc. The course will examine general issues involved in research design and research evaluation as well as issues involved in selecting methods to suit particular research problems and questions.
Full course, Modules 1-2. Ms. Fields.

200. DIRECTED READINGS.

Variable credit.
Modules 1-2-3-4-5. Staff.

201. SPECIAL PROJECTS.

Variable credit.
Modules 1-2-3-4-5. Staff.

205.1. ADVANCED TOPICS IN SOCIAL PSYCHOLOGY: SMALL GROUP THEORY AND CONCEPTS.

Not offered, 1974-75.

This is an intensive course designed to introduce the student to some of the major concepts and theories which have been developed to understand small group and interpersonal processes. The formulations of persons such as Freud, Sullivan, Mead, Bion, exchange theorists, and others will provide the major focus of the course.
Half course, Module 3. Mr. Sampson.

205.2. ADVANCED TOPICS IN SOCIAL PSYCHOLOGY: SMALL GROUP PRACTICUM.

Not offered, 1974-75.

This is an intensive, unstructured small group experience designed primarily for students who have completed the small group theory course and who now wish to enrich their intellectual knowledge by a direct self-analytic group experience. The class will be organized into an unstructured group and will spend the term examining the material which is generated by this group.
Half course, Module 4. Mr. Sampson.

220.2. ETHNOLOGY: IRISH CULTURE AND POLITICS.

This is an intensive seminar for the study of the Celtic Nation. We will examine the social-political history, ethnic identity, contemporary conflict, and music, art and literature as manifestations of the traditional and modern Irish culture.
Full course, Module 3. Ms. Fields.

225. SOCIOLOGY OF SEX ROLES.

The focus of the course is on the sex role socialization process. This is considered in relation to social class and caste, cultural variables, political and psychological effects and implications.
Full course, Module 4. Ms. Fields.

266. CONTEMPORARY AMERICAN JEWISH COMMUNITY.

Refer to description under History 231. Also cross-listed wth Jewish Studies.
Full course, Module 1-2. Mr. Rosenblum.

243. POLITICAL SOCIOLOGY.

Politics, may, for certain purposes, be seen as the result of structures of sentiment and power from which particular policies and institutions emerge. This course examines, in theory and research, class and political behavior, the political economy of power, sources of conflict and stability in modern society and social movements.
Full course, Module 3. Mr. Ross.

244. RACE AND ETHNIC RELATIONS.

The purpose of this seminar is to enable the participant to begin to develop a theoretical framework for analyzing problems of racism and to conceptualize solutions to the problems consistent with the analysis.
Full course, Modules 1-2. Mr. Smith.

245. THEORETICAL MODELS IN SOCIAL ACTION.

A critical evaluation of anthropological, sociological, and literary sources and their application to contemporary social problems.
Full course, Module 5. Mr. Gerber.

246. SOCIAL PLANNING AND SOCIAL POLICY.

This seminar will be concerned with the analyses of policy issues related to urban social problems. The seminar will address itself to three major objectives: (1) how social policy is formulated; (2) how social problems are analyzed from the perspective of the policy makers; (3) how social policy addresses problems of social importance in urban society. The student will be introduced to the literature of the field, and will be given opportunities to analyze specific urban social problems.
Full course, Module 5. Mr. Ross.

247. URBAN SOCIOLOGY.

The ethnic and other communities of the big cities will be examined through the literature of historical and community studies; these materials will provide the basis for interpreting urbanism and the politics of the recent period. The political machines, the functions of social policy and the problems of our big cities are some of the broader issues discussed. In 1974-75 this course will be taught in conjunction with History 246, The American City. Students may elect to take it for either History or Sociology credit.
Full course, Module 2. Mr. Ross.

254. SOCIOLOGY OF RELIGION.

This course starts with an analysis of the breakdown of the medievel metaphysics and the founding of the modern world. The objective of this course is to introduce the student to a sociological perspective on religion and to apply this perspective to an analysis of the contemporary religious situation in particular and to the current status of epistemic communities in general. Theorists whose positions will be emphasized are: Durkheim, Weber, Mannheim, Eliade, Berge and Schutz.
Full course, Modules 3-4. Mr. Smith.

255. SEMINAR IN THE FAMILY.

Critical, historical and feminist perspectives on the institutions of marriage and the family. The seminar will consider comparative, historical and theological analyses of the social role of women vis-a-vis the role relationships inherent in marital institutions.
Full course, Modules 3-4. Ms. Fields.

256. SOCIAL STRATIFICATION.

An analysis of the major dimensions of social stratification in contemporary society. Economic class, social status, power, class consciousness, social mobility and the consequences of class difference.
Full course, Module 5. Mr. Peck.

263.1. DEVIANCE: JUVENILE DELINQUENCY.

This course has two fundamental objectives: (1) to introduce the student to the literature, research, and conceptual problems in the field of deviance; and (2) to examine two conceptual frameworks out of which contemporary definitions of deviance emerge. The specific focus will center around delinquency and criminal behavior. The major purpose of this course is to increase the student's sensitivity to some of the major factors affecting deviant behavior.
Half course, Module 1. Mr. Smith.

263.2. DEVIANCE: SOCIAL CONTROL.

This course is an extension of 263a. The focus will be upon deviant behavior and the mechanisms of social control.
Half course, Module 2. Mr. Smith.

263.3. DEVIANCE: DRUGS.

This course will view drug taking as a social phenomenon. Hence, the focus will be on the social aspects of drug taking.
Half course, Module 5. Mr. Smith.

265. SOCIAL MOVEMENTS.

This course will discuss the general characteristics of modern social movements with the New Left and other protests of the sixties as extended case examples. Problems of recruitment, organization, and ideology will be analyzed. The form of the course will depend on the size of registration.

Full course, Module 3-4. Mr. Ross.

271. FIELD METHODS: QUESTIONNAIRE AND INTERVIEW APPROACHES.

The course is designed to introduce students to methods of social data collection and analysis by involving the students in the full process involved in the use of questionnaire and interview approaches. Emphasis in the course will be on learning by actually doing a field investigation. Students in the course collectively will formulate an issue and a population to be studied, will develop a questionnaire and interview schedule, collect data using interview and questionnaire methods, develop and carry out appropriate procedures for analysis of these data, ask and answer questions of these data, write up and report on the conclusions and the implications of their investigation.

Full course, Modules 3-4. Mr. Sampson.

290.1. SOCIOLOGICAL THEORY: CLASSICAL.

Beginning with the European writings of the early 16th century and extending to the expression of social theory at the turn of the 20th century, the course focuses on the way in which certain social themes dealing with human relationships were treated in the classic works of outstanding European social philosophers and theoreticians. These social themes refer to issues of value consensus and social conflict, established power and rebellious disorder, the social person and the alienated human. Oriented to a sociology of knowledge perspective, the range of ideas beginning with Machiavelli and More and ending with Weber and Simmel are considered in the context of the history and social structure of national capitalism as it emerged in the specific national settings of Italy, England, France and Germany.

Full course, Modules 1-2. Mr. Peck.

290.2. SOCIOLOGICAL THEORY: CONTEMPORARY.

Social developments in the United States during the post World War II epoch have given rise to a variety of theoretical views in the field of sociology. The diversity of approach and fragmentation of theoretical stance will be related to significant changes in social structure and political economy of the United States during the past three decades. The relationship between social theory and political ideology will be considered throughout.

Full course, Modules 3-4. Mr. Peck.

291. SOCIAL PSYCHOLOGICAL THEORY: SYMBOLIC INTERACTIONISM.

The main purpose of this course is to introduce the student to the literature and growing body of research in the interactionist perspective. This perspective views behavior as a product of social interaction. Behavior is socially constructed by persons, groups, organizations, through their on going interaction. Behavior is symbolically meaningful, malleable and emerges from a process of collective interaction.

Full course, Module 3. Mr. Smith.

293. ANTHROPOLOGICAL THEORY.

This course will explore the development and nature of anthropological theory as it is derived from the field experience. Aspects to be covered include: Malinowski, Radcliff Brown, Levi Strauss, Clifford Geertz. The later part of the course will deal with phenomenological and psychedelic anthropology as a way of generating theoretical models of reference.

Full course, Modules 1-2. Mr. Gerber.

297. TOPICS IN SOCIOLOGICAL THEORY: THE PERSON AND THE SYSTEM.

Everywhere men and women strive for love and personal acceptance, but they receive these only at certain places and times. This course is primarily an analysis of theories of rational efficiency and communal or primary needs in modern society. It examines recent protests as symptoms of alienation; revised orthodox theory of rational efficiency; shows the inherent limits of countercultural or communal ideologies; and suggests the contributions to understanding the strategy which critical theories may make.

Full course, Modules 1-2. Mr. Ross.

299. THESIS-SEMINAR.

The course combines seminar with independent study on selected topics. The course is intended for senior sociology majors. Each member of the sociology faculty offers a set of topics and thesis-issues; students should sign up with the faculty person whose areas of interest are most congruent with their own. Emphasis in the course is upon independent work undertaken with faculty guidance and supervision. It is possible to take this as a year-course that results in the submission of a thesis, thereby making selected students eligible to be considered for Honors in sociology.

Variable credit.
Modules 1-2-3-4. Staff.

TECHNOLOGY AND MAN

PROGRAM COMMITTEE

John A. Davies, Ph.D., Associate Professor of Physics
Harvey Gould, Ph.D., Associate Professor of Physics
Christoph Honenemser, Ph.D., Associate Professor of Physics, Chairman
Samuel E. Johnson, Ph.D., Assistant Professor of Zoology
Roger E. Kasperson, Ph.D., Associate Professor of Government and Geography
Robert W. Kates, Ph.D., Professor of Geography
Michael McClintock, Ph.D., Visiting Professor of Physics
Frank W. Puffer, Ph.D., Associate Professor of Economics
Stanley J. Poreda, Jr., Ph.D., Assistant Professor of Mathematics
John T. Reynolds, Ph.D., Professor of Microbiology

UNDERGRADUATE PROGRAM

Technology and Man is a directed program of interdisciplinary study with emphasis on the assessment of technology in a social and political context. The goal of the program is to train individuals who are able to deal with policy questions on the use and misuse of science and technology, and who do so with the short and long range limitations of the natural environment in mind.

Although science and social science are both important in man-technology studies, the requirements of the Program on Technology and Man do not give equal weight to both. Instead, course requirements give special emphasis to achieving literacy in science, and provide for significant achievement in at least one discipline of science. The reason for this emphasis is two-fold: (1) many significant problems are accessible only with a thorough grounding in science; (2) in the nation's future, there is a significant need for managers of technology whose experience with science and technology is more than perfunctory.

The major in Technology and Man should be of interest to students with significant talent for science, whose goal is to understand the important issues at the complex interface between science and society. Some graduates of the program may define themselves in terms of the rapidly emerging new field of technology assessment. Others may enter broadly defined graduate areas such as resource management, geography, oceanography, and environmental science. The program should also be of interest to pre-medical and pre-law students, in particular those interested in environmental law, potential school teachers, community service workers, government regulatory officials and science writers.

The requirements for a major in Technology and Man are as follows:

(1) Ten semesters of basic natural science, with at least six semesters in a single discipline. For the present purpose, the natural sciences shall include Physics, Chemistry, Biology, and Mathematics.

(2) Four semesters of courses in social science selected with advice of the Program Committee to fulfill the goals of the program.

(3) Three semesters of problem oriented courses on specific issues from the listing below. In general, the problem oriented courses will be offered under the specific auspices of the Program Committee, will provide a distinctly multidisciplinary approach, will have a significant, if not predominant, science input, and will in most cases be offered jointly by two or more faculty.

The choice of specific courses to meet the science and social science requirements will be made with approval of the Program Committee. Students should present their plans of study in the form of a written proposal to the Chairman of the Program Committee after discussions with individual members of the Committee, particularly those who are affiliated with departments in which the student wishes to specialize.

Students who intend to do graduate work are encouraged to investigate the minimum major requirements of the basic scientific discipline in which they plan to concentrate, and may wish to fulfill these requirements along with the requirements of Technology and Man.

Because the Program on Technology and Man is interdisciplinary, it poses the task of comprehensive organization to the student. To evaluate the success of organization and integration, majors will be given a three-part comprehensive examination in their senior year. The three parts of the examination will be (1) basic science in a discipline of the candidate's choice; (2) basic social science in a discipline of the candidate's choice; (3) problems of Technology and Man in a special area of the candidate's choice. The examinations will be conducted under the auspices of the Program Committee with special assistance from departments and visiting examiners. The examinations will be offered in January. For those who fail, a second chance will be given in May. Successful degree candidates must eventually pass two of the three comprehensives.

Students who wish to receive Honors in Technology and Man must pass the comprehensive examination at the B+ level, and must present an acceptable undergraduate thesis.

The following courses satisfy the requirements of problem oriented courses. The courses are open to all qualified undergraduate and graduate students, and have no specific prerequisites.

COURSES

10. INTRODUCTION TO TECHNOLOGY AND MAN.

A course designed to raise several questions of far-reaching import that recur throughout man-technology studies. What is an acceptable level of technological sophistication? What is an acceptable human population? How long do we want to use the planet? Is the climate changing due to air pollution? Answers to these and similar questions will depend on ethics as well as detailed analysis of technology. For 1974-75, the course will examine these questions in the context of specific technologies, such as the automobile, the airplane, and the set of methods by which energy is used in a technological society. Readings will include Commoner, Ehrlich, Hardin, Meadows, Platt and others. Analytical tools will be drawn from high school mathematics and natural science, or will be developed as part of the course.

Full course, Modules 1-2. Mr. McClintock

101. INTRODUCTORY CASE STUDIES.

Not offered, 1974-75.

The course seeks through case studies to introduce the student to the kind of tools he will need in man-technology studies. The U.S. transportation problem, particularly in urban areas, provides a major focus. The scope of U.S. transportation systems will be described in physical and economic terms, with emphasis on resources required. Concepts from economics, natural science, as well as other disciplines will be introduced as needed. The course will culminate with critical discussion of the Boston area transportation problem, and will include limited field work and experimentation.

Full course, Modules 1-2. Mr. Hohenemser, Mr. Puffer.

121. ENERGY SELF-SUFFICIENT HABITATS.

This seminar will investigate the feasibility of using freely available sources of energy, such as solar, aeolian, or that derivable from wastes, to provide the energy for necessary functions in the home. We will investigate what is known about the use of sun, wind, and waste to provide energy for human habitats, but we will also give similarly close attention to the feeling of peace and the regenerative capacity that must be obtainable in a successful habitat. Demonstration experiments will be conducted by students in the seminar to provide data on the feasibility of certain physical features of a prototype habitat, and preliminary designs of prototypical habitats will be developed for future study. The seminar will be limited in enrollment to 20 students of either upper division or graduate standing.

Full course, Modules 1-2. Mr. Krueger, Mr. McClintock.

142. ENVIRONMENTAL CHEMISTRY.

A study of the chemistry of the problems of the environment. Topics covered are chemistry of air and water pollution and possible solutions. Topics of interest include pollution from fossil fuels, oil pollution, pesticides, metal contamination, food additives, solid wastes. The laboratory primarily will make use of analytical techniques. Prerequisites: Chemistry 130 or 132. Three lectures and one laboratory per week. (The course is cross listed as Chemistry 142).

Full course, Modules 1-2. Mr. Allen.

150. AQUARIUS: PLANNING FOR URBAN WATER RESOURCES.

Refer to description under Geography 150.

Staff.

161. POPULATION, RESOURCES, AND HEALTH.

An assessment of critical problems relating to the growth of human population. Topics to be discussed include the biology of population growth, the current description of human population,

the resource base for human populations, and health problems related to high density of population and technology. There are no specific prerequisites, but students should have some background in biology, chemistry, or physics.
Full course, Modules 1-2. Mr. Hohenemser, Mr. Reynolds.

201. ENERGY AND SOCIETY.

The course examines the ways in which energy is provided to an industrial society such as that of the United States. The use and remaining reserves of fossil fuels are studied, e.g., coal and petroleum, as well as those methods planned for the future, e.g., the nuclear breeder reactor. Special attention is given to alternative forms of energy production, such as solar, wind, fusion, and use of the temperature differences in ocean currents. The environmental impacts of the various energy sources are examined, and a rationale is developed for choosing among the alternatives. Changes in life style caused by modification of energy demand are also explored. Students will undertake task force studies on various aspects of national and global energy policy. (The course is cross-listed with Geography.)
Full course, Modules 3-4.
Mr. McClintock and invited guest lecturers.

211. THE DYNAMICS OF SYSTEMS.

A course designed to provide the student with an understanding of the contributions that computer similation models can make in the formulation and assessment of alternative social, economic, and technological policies. Lectures and assignments will be based on models drawn from actual problems including limits to growth, determinants of long-term resource availability, epidemiology, and industrial dynamics. Students will construct, operate, and analyze their own models of social systems. The course does not require previous experience with computer systems nor special competence in mathematics, but familiarity with calculus is desirable.
Full course, Modules 1-2. Mr. Gould, Mr. Gottlieb.

239. BIOLOGICAL SYSTEMS AND WATER POLLUTION CONTROL.

Refer to description under Biology 239.

256. SCIENTIFIC INFORMATION AND SOCIETAL RESPONSE TO ENVIRONMENTAL HAZARD.

An exploratory research seminar on the relationship between the quality and presentation of scientific information and the societal response to environmental hazard of human origin. Part of an international collaborative research effort, the seminar is limited to 12 graduate students and advanced undergraduates with research interests in this topic. Participation includes attending a faculty seminar during the January reading period, independent research and tutorials during module 3, and group presentation of research during module 4. Permission of instructors is required. (The seminar is cross-listed as Geography 256).
Full course, Modules 3-4. Mr. Kates, Mr. McClintock.

270. SPECIAL TOPICS IN TECHNOLOGY AND MAN.

Independent readings and/or experimental work.
Variable credit.
Modules 1-2-3-4. Staff.

271. HONORS IN TECHNOLOGY AND MAN.

Supervised research leading to an undergraduate thesis.
Variable credit.
Modules 1-2-3-4. Staff.

272. SPECIAL PROBLEMS IN ALTERNATIVE SOURCES OF ENERGY.

Independent research on problems in the energy fields of special concern to society.
Variable credit. Staff.

280. COLLOQUIUM.

Bi-weekly invited lectures on research topics of current interest to be offered throughout the academic year.
No credit. Staff.

VISUAL AND PERFORMING ARTS

MUSIC

DEPARTMENT FACULTY

Relly Raffman, A.M., George N. and Selma U. Jeppson Professor of Music, Department Chairman
Wesley M. Fuller, M.Mu., Associate Professor of Music*
Gerald R. Castonguay, A.M., M.Mu., Assistant Professor of Music
Susan Clickner, B.M., Assistant Professor (Affiliate) of Voice
Evelyn Fuller, M.Mu., Assistant Professor (Affiliate) of Piano
Virginia Leguia, M.S., Assistant Professor (Affiliate) of Flute
Allan Mueller, Affiliate in Piano

*On leave, 1974-75.

UNDERGRADUATE PROGRAM

The department offers courses designed to teach students how to listen to music intelligently, to develop a comprehension of music on its own terms and to acquaint students with representative works from various periods of music history.

The music major includes the following courses:

Prerequisite: Music 120 (Rudiments), or placement examination.

Theory: 121, 122, 123, 124, 125.

Music History: 12, 13, 14, 15, 17 or one full course credit in 117.

Related areas: a full course in Fine Arts, Theatre Art or Film Studies; or a full course in Esthetics.

A minimum essentials test, including sight-singing and dictation at a level of proficiency necessary for the successful pursuance of the major, must be passed during the sophomore year. A keyboard proficiency examination must be passed during the junior year. As a senior, the music major, with the permission of the department, may elect two semester courses of tutorial work in one or more of the following areas: Music History (118), Composition (128), or Theory (138). Those wishing to concentrate in a performance area must pass an audition at the beginning of the junior year. In addition, all majors must complete nine full courses outside of Philosophy 16 (Esthetics), courses in visual and performing arts and literature.

Individual instruction in piano, jazz piano, flute, violin and voice will be offered for credit during the 1974-75 academic year. Arrangements for lessons should be made at the music office during the registration period. Practice rooms are available without charge.

COURSES

10. INTRODUCTION TO MUSIC.

Designed for the non-major, this course is a prerequisite for entrance into all Music History or Survey Courses. No credit towards the major is allowed. Open to freshmen.
Full course, Modules 1-2. Staff.
Repeated, Modules 3-4.

110. INTRODUCTION TO MUSIC.

Special topics in music pedagogy. For majors only.
Half course, Modules 1-2-3-4. Staff.

11. SURVEY OF MUSICAL STYLE.

Not offered, 1974-75.

Designed for the non-major, the survey deals with the study of selected works of the major periods in Western Music from the early chant to the present. Prerequisite: 10.
Staff.

120. RUDIMENTS OF MUSIC.

An introduction to the fundamentals of music. No previous experience is necessary. Notation, ear-training, sight-singing, score reading, and elementary melodic and harmonic organization. Satisfies prerequisite for credit in Music 18 and entrance into Music 121.
Full course, Modules 3-4. Mr.Castonquay.

113. J. S. BACH AND HIS MUSIC.

This course focuses on the study of Bach and his music. It investigates the social, historic, and cultural setting of Bach's era, and, in particular, it encompasses an intense study of his music including the early cantatas and organ works, the great production of instrumental music from his Cothen period, and, finally, the mature cantatas of his Leipzig years. When possible, works will be performed in class and scores will be provided for the majority of works studied. Prerequisite: 10 or 120.
Full course, Module 5. Mr. Castonguay.

116. CHAMBER MUSIC OF THE BAROQUE.

This course surveys the chamber music of the Baroque, focusing specifically on works for small ensembles involving instruments as well as voices. It incorporates the study of the Baroque madrigal for voices and instruments in addition to the large corpus of music dealing with the instrumental canzona and trio sonata of the period. The course aims to explore the problems of Baroque performance practice centering on the manner and style of performing this chamber music. Prerequisite: consent of instructor.
Half course, Module 5. Mr. Castonquay.

121. PRIMARY THEORY.

A study of the structure of tonal music. Analytical and compositional problems in homophonic, monodic and polyphonic textures. Basic orchestration. Ear-training, sight-singing and conducting. Prerequisite: 120 or entrance examination (given at 1st class meeting).
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Raffman.

12. MEDIEVAL AND RENAISSANCE PERIODS.

A survey of music before 1600. Prerequisite: 10 or 120. Offered in alternate years.
Full course, Modules 1-2. Mr. Castonguay.

122. THEORY: MODAL COUNTERPOINT.

Offered in alternate years. Prerequisite: 121.
Full course, Modules 1-2. Mr. Fuller.

13. BAROQUE PERIOD.

A survey of music from 1600 to 1750. Offered in alternate years Prerequisite: 10 or 120.
Full course, Modules 3-4. Mr. Castonguay.

123. THEORY: 18th-CENTURY COUNTERPOINT.

Prerequisite: 121. Offered in alternate years.
Full course, Modules 3-4. Mr. Raffman.

14. CLASSICAL AND ROMANTIC PERIODS.

Not offered, 1974-75.

A survey of music from 1750 to 1900. Offered in alternate years. Prerequisite: 10 or 120.
Mr. Castonguay.

124. THEORY: 19th-CENTURY PRACTICE.

Not offered, 1974-75.

Prerequisite: 121. Offered in alternate years.
Mr. Raffman.

15. TWENTIETH-CENTURY MUSIC.

Not offered, 1974-75.

A survey of early 20th-century masterworks. Representative composers: Debussey, Ravel, Prokofiev, Stravinsky, Bartok, Hindemith, Schoenberg, Berg and Webern. Offered in alternate years. Prerequisite: 10 and 120.
Mr. Raffman.

125. THEORY: 20th-CENTURY PRACTICE.

Not offered, 1974-75.

Prerequisite: 124. Offered in alternate years.
Mr. Fuller.

16. CHAMBER MUSIC.

Not offered, 1974-75.

A survey of selected works of the major composers in the field in chamber music from Haydn to Stravinsky. Trips to concerts in the surrounding area will be made whenever feasible. Offered in alternate years. Prerequisite: 10 or 120.
Mr. Castonguay

17. OPERA.

Not offered, 1974-75.

With the help of translated librettos, recordings and selected readings, a study is made of a group of operas representing all periods of music history, with emphasis on the many solutions to the combination of music and drama. Prerequisite: 10 or 120. Offered in alternate years.

Mr. Fuller.

117. CONCERT CHOIR.

Prerequisite: Audition and permission of instructor.
Quarter course, Modules 1-2.
Quarter course, Modules 3-4. Mr. Fuller

18. PRIVATE INSTRUCTION IN INSTRUMENTS AND VOICE.

Offered in 1974-75: piano, jazz piano, voice, flute and violin. One quarter course credit per two module sequence is to be held in escrow until a half course is earned and prerequisite passed. Student enrolling in voice instruction must schedule 2 half-hour lessons per week at an extra-quarter course charge. Prerequisite for credit: successful completion of Music 120 or passing of entrance examination to Music 121 (given in September).
Quarter course, Modules 1-2.
Quarter course, Modules 3-4. Staff.

19. INTRODUCTION TO NON-WESTERN MUSIC.

Not offered, 1974-75.

Music of Cultures not of the Western European tradition are studied. Specific courses considered will vary, but music of India, Japan, Africa, and China is among those included. Offered in alternate years. Prerequisite: 10 or 120. For consortium: a music history or theory course.

Mr. Fuller.

119. MUSIC OF THE AVANT GARDE.

Innovations and developments of the earlier years of the 20th-century are examined in the works of the recent past: extended serial techniques, aleatory, electronic and computer music, neo-dadaism and multi-media. Offered in alternate years. Prerequisite: 15 or permission of instructor.
Full course, Modules 3-4. Mr. Fuller.

130. JAZZ WORKSHOP.

Prerequisite: permission of instructor. Those entering the workshop must also register in 131 and are expected to have had practical experience in jazz performance. Offered in alternate years.
Half course, Module 2. Mr. Raffman.

131. JAZZ THEORY.

Prerequisite: permission of instructor. Those entering Jazz Theory must also register in either 132 or 130. Offered in alternate years.
Half course, Module 1. Mr. Raffman.

132. HISTORY OF JAZZ: SEMINAR.

Offered in alternate years. Prerequisite: 10 or 120.
Half course, Module 2. Mr. Raffman.

118. SENIOR TUTORIAL IN MUSIC HISTORY.

Majors only. Permission of instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

128. SENIOR TUTORIAL IN COMPOSITION.

Majors only. Permission of instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

138. SENIOR TUTORIAL IN THEORY.

Majors only. Permission of instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

148. SENIOR TUTORIAL IN PERFORMANCE.

Majors only. Audition must be passed at beginning of junior year.
Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

140. ELECTRONIC MUSIC.

Not offered, 1974-75.

Group and individual instruction in electronic composition and analysis. Studio is equipped with Buchla electronic music synthesizer. Visits will be made to other studios throughout the New England area. Prerequisite: permission, 120 or 121. Offered in alternate years.

Mr. Fuller

ART

DEPARTMENT FACULTY

Donald Krueger, M.F.A., Associate Professor of Art, Associate Chairman for Art
Samuel P. Cowardin, III, Ph.D., Associate Professor of Art History
Sante Graziani, M.F.A., Associate Professor (Affiliate) of Art
Peter M. Barnett, Ph.D., Assistant Professor of Art History

UNDERGRADUATE PROGRAM

Courses in art are designed to develop understanding and sensitivity in the visual arts and to enable students to think and communicate visually. Majors in art history and in studio art are offered.

Admission to the art history major program requires at least a B in Art 11 (or an equivalent course) and staff approval. Students must complete 6 courses in art history beyond the introductory level, 4 studio courses, 2 courses in related areas and a senior project in art history.

Work for the studio art major is done at the School of the Worcester Art Museum. Clark students are admitted to study at the school by portfolio evaluation and permission of the Art Program Chairman and are expected to observe the regulations and calendar of the School. Studio majors must complete a minimum of 10 studio courses, 2 courses in art history (normally Art 11) and 2 courses in related areas. Depending upon professional interest, the student is advised to elect studio courses beyond the required minimum, up to 16 courses.

Related areas include: film studies, theater arts, music and aesthetics.

COURSES

11. INTRODUCTION TO WESTERN ART I.

Ideally the first half of a four-module sequence, this course covers classical, medieval and early Renaissance art. The first several weeks are devoted to an examination of basic elements in the visual arts, and to certain fundamental matters of terminology and approach. Selected works are then discussed as exemplars of style and artistic quality in the context of the leading ideas of their respective eras. Because of the selective processes of time, architecture and sculpture must receive slightly greater emphasis than painting. Students are encouraged to observe original works in local museums.

Full course, Modules 1-2. Mr. Cowardin.

11. INTRODUCTION TO WESTERN ART II.

A continuation of 11, *Introduction to Western Art I.* The Course will cover the history of Western art from the Renaissance up to the present, emphasizing painting, but touching on sculpture and architecture. Emphasis will be placed on characteristics of individual and period style within the works themselves, the primary aim being to develop sensitivity to pictorial elements. In addition, the social and historical background of the artists will be considered where appropriate. Evaluation will be based on ability to analyze and discriminate visually, rather than on memorization of facts. Will offer a Sunday trip to the Boston museums.

Full course, Modules 3-4. Mr. Barnett.

12. SURVEY OF PAINTING.

A general introduction to the art of painting, covering a wide range of examples from East and West. The approach is historical only in that the material is taken up more or less in historical sequence and the stylistic development is viewed against the background of changing ideas. But matters of technique, design, and expression receive due attention.

Full course, Modules 3-4. Mr. Cowardin.

88. DIRECTED READINGS.

Staff

89. SPECIAL PROJECTS IN VISUAL ARTS.

Independent studio art study. By permission of the instructor. Variable credit.
Modules 1-2-3-4-5. Mr. Krueger.

98. SENIOR PROJECT IN STUDIO ART.

Full course, Modules 1-2,3-4. Mr. Krueger.

99. SENIOR PROJECT IN ART HISTORY.

Individual research culminating in a major paper. Periodic meetings with the staff to evaluate and discuss progress. Required of all majors in art history.
Full course, Modules 1-2,3-4. Staff.

100. ART IN NEW ENGLAND MUSEUMS.

A close study of the local collections and those within a radius of about an hour's driving time of Worcester. The particular strengths of the various collections will be emphasized, and there will be intensive class preparation for the gallery visits. Familiarity with some phase of art history would be helpful to the individual but is by no means a requirement. Discussion, reports, and a term paper. Enrollment by permission.
Full course, Module 5. Mr. Cowardin.

110. THE ART AND ARCHEOLOGY OF GREECE AND ROME.

Refer to description under Classics, Department of Foreign Languages and Literatures.
Full course, Modules 3-4. Mrs. Toepel.

115. SELECTED SUBJECTS IN MEDIEVAL ART.

A brief overview of the main phases of medieval art is followed by a series of student reports intended to illuminate specific subjects or deal with special problems. A maximum of student participation, each member of the course being responsible for at least two reports. Enrollment limited. Prerequisite: one course in art history.
Full course, Modules 3-4. Mr. Cowardin.

116. ART OF THE TRECENTO IN SIENA AND FLORENCE.

Late Gothic art in Siena and Florence, with emphasis on painting. Examines the stylistic currents and countercurrents which led into the art of the early Renaissance. Discussions will seek to point up the significance of the great initiators, Duccio and Giotto, and to appraise some of the lesser known but important masters of the later fourteenth century. To the extent of available time, the study of the Sienese school will carry into the Renaissance.
Half course, Module 2. Mr. Cowardin.

120. ITALIAN RENAISSANCE ART: 15th CENTURY.

The course is concerned with art in the context of developing humanism and rationalism, mainly in Florence, but with excursions into North Italy. The aim is to delineate the character of early Renaissance art and to distinguish its principal stylistic currents as they move toward confluence in the High Renaissance. Particular attention is given to the ideas of Alberti and some of the intellectuals in the circle of the Medici. Architecture, sculpture and painting receive approximately equal emphasis.
Full course, Modules 1-2. Mr. Cowardin.

121. ITALIAN RENAISSANCE ART: 18th CENTURY.

The great figures of High Renaissance art in Florence and Rome are the focus of the first part of the course. It will try to define, through readings and discussion, the special aesthetic qualities of this particular "classic moment", seen against the political and intellectual background. The course must also confront the difficult questions relating to the evolution of Mannerism, as well as the definition of this phenomenon. Finally the scene will shift briefly to Venice. Class participation is encouraged and the coverage is kept flexible enough to accommodate it.
Full course, Modules 3-4. Mr. Cowardin.

122. MICHELANGELO AND THE HIGH RENAISSANCE.

Not offered, 1974-75.

Concentrates on Michelangelo's work in architecture, sculpture and painting, taking into account personal, religious, intellectual and political influences in his life. His style will be viewed in relation to the Renaissance background as well as the Mannerist trends of the sixteenth century.
Full course, Modules 3-4. Mr. Cowardin.

123. VENETIAN ART.

Not offered, 1974-75.

Art in the Veneto from the twelfth century through the eighteenth, with emphasis on the Renaissance. Seeks to define the qualities

that distinguish the work of this region, especially in painting. The major figures, such as Palladio and Titian, will be studied in depth in the context of Venetian humanism and other elements of contemporary culture.
Full course, Modules 1-2. Mr. Cowardin

124. NORTHERN RENAISSANCE PAINTING.

Concentrates on painting in Flanders from Van Eyck to Breugel. Style, technique, and expression in representative works will be viewed in relation to their own background and to contemporary work in Italy. A secondary focus will be on the impact of Italian influence upon the art of France, Germany and the Netherlands in the sixteenth century.
Half course, Module 1. Mr. Cowardin.

130. 17th CENTURY—THE HIGH BAROQUE.

Not offered, 1974-75.

The course will deal with the principal masters of European painting in the seventeenth century. It will emphasize close visual analysis of particular works, in order to isolate the expressive intention of each artist, as reflected in devices and techniques he employs. There will be a secondary emphasis on the social circumstances which underlie the broad range of national styles.
Full course, Modules 1-2. Mr. Barnett.

131. 18th CENTURY — ROCOCO TO REVOLUTION.

Not offered, 1974-75.

The course is a continuation of the above, but the emphasis will be reversed. There will be primary preoccupation with relationships between the art of the period and the social circumstances which produced it. There will be an attempt to relate events in painting both to political and social events and to parallel currents in the arts in general. Discussion will cover the broad social and philosophical questions raised by the painting examined.
Full course, Modules 3-4. Mr. Barnett.

140. 19th CENTURY PAINTING—NEOCLASSICISM AND ROMANTICISM.

The course will cover European Painting from the French revolution to 1848, covering particularly artistic movements in France and England. In addition to a study of the works in terms of style and treatment, there will be an emphasis on the social and intellectual environment out of which they emerged. This course, with the three below, will also concentrate on identifying those currents which are forward-looking, and lead to painting as we know it today.
Half course, Module 1. Mr. Barnett.

140. 19th CENTURY PAINING—REALISM AND IMPRESSIONISM.

The course will cover European Painting from 1848 through post-impressionism, covering particularly movements in France. Will emphasize a response to the works in terms of style and treatment, and will also emphasize the development of the aesthetic ideas which underlie 20th century approaches to art. As above, it will emphasize the emergence of the elements of modern art, in particular the curious link between realism and the beginnings of non-representational art.
Half course, Module 2. Mr. Barnett.

141. 20th CENTURY PAINTING—EARLY MOVEMENTS.

The course will deal with the major movements in European painting during the early 20th century, including Fauvism, Cubism, Expressionism, Surrealism and abstract art. The emphasis will be on developing a framework within which to understand the works, both individually and in historical context. Will offer an opportunity for direct response to the works, and for discussion of the philosophical basis of 20th century painting.
Half course, Module 3. Mr. Barnett.

141. 20th CENTURY PAINTING—CONTEMPORARY MOVEMENTS.

The course will deal with trends in 20th century painting since World War II, concentrating on American artists. This segment will abandon the historical framework developed in the first segment of 141 (above) in favor of a work by work response to individual paintings. It will attempt to see the range of possibilities currently open to the artist, and to open class discussion to the basic questions of definition and judgment which the paintings raise. Though a few major developments will be discussed for their historical significance, artists and works will largely be looked at as unique and isolated aesthetic events, to be responded to individually.
Half course, Module 4. Mr. Barnett.

142. CONTEMPORARY DIRECTIONS.

A consideration, through discussion, museum visits and studio work, of current movements, directions, styles and attitudes in the visual arts. Enrollment by permission of the instructor.
Full course, Module 5. Mr. Krueger.

150. INTRODUCTION TO ORIENTAL ART: ANCIENT NEAR EAST AND INDIA.

Not offered, 1974-75.

A preliminary look at the Near East is designed to acquaint the student with the styles and iconography of ancient Mesopotamian and Iranian art as a background for developments in India and Central Asia. The major part of the course deals with Indian art from prehistoric times through the period of the Moslem dynasties, and with the spread of Indian culture into Indo-China and Indonesia. Monuments of Buddhist and Hindu art are studied and discussed in the light of the faiths which inspired them. The philosophy, mythology and iconography of these faiths are the subject of background readings intended to inform the discussion. Aside from its intrinsic value, this material is basic to further study of Buddhist art in China and Japan.
Full course, Modules 1-2. Mr. Cowardin.

151. INTRODUCTION TO ORIENTAL ART: CHINA AND JAPAN.

Not offered, 1974-75.

The greater part of the course (about two thirds) is devoted to the art of China from the beginnings through the Yuan Dynasty. As an introduction, it has no pretensions to completeness, but singles out for study certain periods and classes of objects, such as Shang and Chou bronzes, Buddhist sculpture and Sung paintings, at the expense of others, such as ceramics and later paintings. The objective is to arouse interest and develop sensitivity to different artistic points of view and aesthetic values, while hopefully laying the foundations for further study. The same approach is carried over to Japan in the remainder of the course, where emphasis is placed on Buddhist sculpture, narrative and landscape scroll paintings, and color woodblock prints.
Full course, Modules 3-4. Mr. Cowardin.

160. ELEMENTS OF ARCHITECTURE—THEORY.

The course will consider architecture as a form of expression, dealing with the major elements of architectural language generically rather than historically. Topics covered will include form, structure, space and function. The major historical styles will be referred to as appropriate to illustrate concepts being discussed. Student work will involve a series of small projects, both written and manual; there will be no examination. Emphasis in student work will be on first-hand experience with concepts and works.
Half course, Module 1. Mr. Barnett.

160. ELEMENTS OF ARCHITECTURE—DESIGN.

The course will consider architectural design from a conceptual rather than a technical viewpoint, and will involve students in their own designs. The emphasis will be on understanding and pursuing a rational design process, rather than on the success of the design itself by practical or aesthetic standards. Student work will be an attempt to resolve operationally the tension between the architect's roles as master of expression and servant of human needs. Will offer an opportunity for a juried project.
Full course, Module 2. Mr. Barnett.

161. 20th CENTURY ARCHITECTURE—EARLY MOVEMENTS.

The course will cover developments in European and American architecture from the end of the 19th century through the early master of modern architecture. It will concentrate on the ideas and works of the major figures: Sullivan, Wright, Gropius, Mies van der Rohe, and Le Corbusier. Emphasis will be not only on the development of style, but also on the social basis of their work.
Half course, Module 3. Mr. Barnett.

161. 20th CENTURY ARCHITECTURE—CONTEMPORARY MOVEMENTS.

The course will deal with movements in architecture since World War II, emphasizing developments which redefine the direction established by the International School of the 1920's. In addition to the work of contemporary architects, futuristic visions of architecture and urban design will be looked at and evaluated. As much as possible, firsthand experience of works in the immediate area will be included.
Half course, Module 4. Mr. Barnett.

162. PROJECTS IN URBAN DESIGN.

This course will involve interested students in the planning and direction of the course, and thus cannot be certainly defined as to scope and content. Tentatively, it will involve students in a design project located in the immediate Worcester area, and may involve both theoretical studies and field work, in addition to design. It would center around individual or group projects, coordinated with meetings of the whole group. Required work to be established by the class.

Full course, Module 5. Mr. Barnett.

165. PRINTS AND PRINTMAKING.

A view of graphic art both historically and technically with special attention on the response of graphic media to the aesthetic needs of the age in which it appears. First-hand acquaintance with materials and techniques will complement class material.

Full course, Modules 1-2. Mr. Barnett.

170. VISUAL DESIGN I — TWO DIMENSIONAL FORM AND COLOR.

A studio course on campus designed to introduce the student to the nature of visual language and the creative process and to develop abilities for original creative thought and action. Basic two-dimensional studio problems in organization, color relationships, form, space, design and visual communication are presented. Work in addition to the scheduled studio hours will be required. Open to non-majors.

Full course, Modules 1-2. Mr. Krueger.

171. VISUAL DESIGN II — SPACE AND THREE DIMENSIONS.

A continuation of 170 to include the study of depth and plastic illusion and basic three-dimensional structural principles and forms. 170 is not a prerequisite but is recommended. Open to non-majors.

Full course, Modules 3-4. Mr. Krueger.

172. VISUAL STUDIES.

A group of one-module studio courses of varying content designed to encourage the development of expressive and communicative visual arts skills. Opportunity is provided for independent study in traditional, contemporary and experimental forms and materials. Topics include: Environmental Space Design, Drawing as Expression, Painting, Contemporary Forms, and others to be determined by students' special interests and skills. 170 and 171 or the equivalent are recommended as preparation. Open to non-majors. Enrollment by permission of the instructor.

Half courses, Modules 1-2-3-4-5. Mr. Krueger.

176. DRAWING: PERCEPTION AND SELECTION.

This will be a course in drawing from nature, including still-life, the human figure, portraiture and landscape. The emphasis will be on the development of skills in seeing, and in recording what you see selectively. There will be no expectation of previous experience, or of special talent; evaluation will be entirely on the basis of effort, and seriousness of interest. Drawing as expression, or the exploration of media, will not be emphasized.

Half course, Module 1. Mr. Barnett.

188. PHOTOGRAPHY (at the Craft Center).

A beginning course and an intermediate/advanced program. Practice in the techniques and aesthetics of photography as a medium of personal expression. Lectures, field trips, and discussions supplement studio and dark room work. A variable setting 35 mm or 2-¼ x 2-¼ camera is required. Materials fee. Not open to studio majors.

Full course, Modules 1-2.
Full course, Modules 3-4. Craft Center Staff.

188. PRINTMAKING (at the Craft Center).

A course designed to familiarize the student with one or more of the graphic techniques: etching, engraving, woodcut, silkscreen. For experienced students the course will emphasize technique and quality in printmaking. Materials fee. Not open to Studio majors.

Full course, Modules 1-2.
Full course, Modules 3-4. Craft Center Staff.

188. CERAMIC DESIGN (at the Craft Center).

An exploration of form, texture and color using basic clayworking methods of hand-forming, coil building and slab construction. Emphasis is on developing an awareness of the elements of sculptural design rather than an attempt to produce utilitarian pottery. Advanced students may be accepted by permission of the instructor or advanced sections may be offered. Materials fee. Not open to Studio majors.

Full course, Modules 1-2.
Full course, Modules 3-4. Craft Center Staff.

199. MUSEUM SCHOOL STUDIO COURSES.

A general designation for all courses at the School of the Worcester Art Museum. Open only to studio art majors by portfolio evaluation and permission of the Art Program Chairman. These are full-year courses (Modules 1-4) and may not be entered in mid-year. See the Museum School catalog and schedule for complete course descriptions and listings.
Double course, Modules 1-4. Museum School Staff.

THEATRE ART

DEPARTMENT FACULTY

Neil R. Schroeder, Ph.D., Associate Professor of Theatre Art, Associate Chairman of Theatre Art, Clark University
Victor Becker, M.F.A., Instructor in Theatre Art, College of the Holy Cross.
Edward J. Herson, M.A., Lecturer in Theatre Art, Director of the Division of Theatre Art, College of the Holy Cross
Donald W. Ilko, Ph.D., Assistant Professor of Theatre Art, College of the Holy Cross
Zeev Raviv, D.F.A., Associate Professor of Theatre Art, Clark University

UNDERGRADUATE PROGRAM

The program in Theatre Art is offered through the Worcester Consortium for Higher Education. It is designed to give students both practical and scholarly experience in all phases of theatre. Courses are open to qualified undergraduates who are willing to devote the time and energy which are necessary for their completion. They are intended to develop theatre artists with a sound humanistic education and to prepare those who are interested for graduate training in educational and professional theatre.

Students who take courses in theatre will be expected as part of their course work to participate in productions of the Theatre Art Program at Clark University and at Holy Cross. Any student may apply for an acting or technical position in the plays of the annual season at Clark or Holy Cross by contacting Professor Neil Schroeder at Clark or Mr. Edward Herson at Holy Cross.

Many theatre courses are offered at Holy Cross. Students should consult the listing in the Department Office at registration time. In most cases, transportation for these courses will be supplied by the Worcester Consortium bus.

The General Program. Through the Worcester Consortium and inter-departmentally at Clark, courses are available in the following areas: acting, directing, technical theatre, design, theatre history and criticism, dramatic literature, and theatre education. Students who wish to test their skills in any of these areas on an elective basis are welcome to apply.

The Theatre Art "Minor" or Double Major. Students who wish to design a minor or double major in Theatre Art are welcome to do so under the direction of Mr. Schroeder. Each program will be designed to meet the individual's specific need. While some may wish to develop a program independent of other academic concerns, others may wish to integrate their program with disciplines such as Music, Fine Arts, Film, English, Modern Languages and Literatures, Philosophy, Psychology, or Education.

The Theatre Art Major. The major program trains students in the fundamentals of various theatre disciplines and prepares them for further training and experience. Students may concentrate in one of the following areas: acting and directing, stage design and theatre technology, theatre history and dramatic literature, theatre education, or general theatre, In addition, a major in an area study of theatre in relationship to the Visual and Performing Arts or other disciplines is also available.

Specific course requirements for the major vary according to the area of concentration and the specific interests of each student. In general, however, each major will be required to take from three to four full semesters (six to eight modules) of work in theatre and allied fields. In addition, students who are enrolled in studio courses are required to participate in the working crews of Departmental productions.

All students who plan to major in Theatre Art or to take a significant portion of their program in Theatre Art should consult Mr. Schroeder early in their careers, for many of the fundamental courses should be taken before the junior year.

COURSES

10. INTRODUCTION TO DRAMA.

A formal approach to dramatic analysis, this course will examine several types of plays from different periods in order to enable the student to understand and evaluate varied techniques of dramatic construction and theatrical presentation. No prerequisite.
Full course, Modules 3-4. Mr. Schroeder.

Theatre Art 11 through 19 and 101 through 109 are courses in elementary acting. There is no prerequisite for any of them. Any combination of two full courses or four half courses constitutes a year of elementary acting.

11. VOICE AND DICTION.

An intensive applied phonetic approach to articulation and voice production, this course focuses on speech for the stage. No prerequisite.
Half course, Module 1. Mr. Schroeder.

12. ORAL INTERPRETATION.

Techniques and practice in the oral interpretation of literature, with special emphasis on the drama and the integration of language with gesture and physical action. No prerequisite.
Half course, Module 2. Mr. Schroeder.

13. APPROACHES TO CHARACTERIZATION.

Various physical, psychological, and theatrical approaches to characterization will be studied through exercises and practical experience. No prerequisite.
Half course, Module 3. Mr. Schroeder.

14. INTRODUCTION TO SCENE STUDY.

The study and interpretation of scenes in the context of the whole play, with special emphasis on the integration of performances with the playwright's intention. Each student will be required to participate in the preparation and performance of several scenes throughout the term. No prerequisite.
Half course, Module 4. Mr. Schroeder.

15. BASIC ACTING.

A systematic approach to acting in the traditional way. Development of the inner resources of the actor: observation, imagination, sensory recall. Analysis of character and characterization. Improvisations and scenes. No prerequisite.
Half course, Module 2.
Half course, Module 5. Mr. Raviv.

16. IMPROVISATIONAL ACTING.

An exploration into the actor's resources through theatre games and improvisations. The process involved in creative imagination and spontaneity, and the interaction between body, emotion, and speech will be stressed. Fundamentals of kinesics—body language, non-verbal communications, and gesture—will be studied as an aid to the actor. No prerequisite.
Half course, Module 1.
Half course, Module 4. Mr. Raviv.

88. DIRECTED READINGS.

A sequence of structured readings on a given topic approved and directly supervised by the instructor. Prerequisite: consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff

89. SPECIAL PROJECTS.

Independent research on a particular problem, or an original creative project, directly supervised by the instructor. Prerequisite consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

110. ACTOR'S WORKSHOP—SERIOUS MODES.

Designed as an intermediate course in the actor's training, this course will consist mainly of the study and presentation of scenes with emphasis on the serious modes and dramatic realism. Prerequisite: two courses in acting or equivalent.
Half course, Module 2. Mr. Raviv.

111. ACTOR'S WORKSHOP—COMIC MODES.

A continuation of Theatre Art 110 with emphasis on comedy, farce, and non-realistic styles. Class project: a one-act play or an act from a full-length play. Prerequisite: Theatre Art 110.
Half course, Module 3. Mr. Raviv.

112. HISTORICAL STYLES OF ACTING—COMEDY.

A study of the problems confronted by the actor when performing in plays written in the past. Students will be expected to act in scenes from classical and neo-classical comedy, comedy of humours, romantic comedy, and comedy of manners and translate the essence of the style into meaningful modern terms. Prerequisite: two courses in acting or equivalent.
Half course, Module 5. Mr. Schroeder.

113. HISTORICAL STYLES OF ACTING—TRAGEDY.

Not offered, 1974-75.

A study of the problems confronted by the actor when performing in plays written in the past. Primary emphasis will be on Greek and Elizabethan tragedy. Students will be expected to act in scenes from these periods and translate the essence of the style into meaningful modern terms. Prerequisite: two courses in acting or equivalent.

Half course. Mr. Schroeder.

114. HISTORICAL STYLES OF ACTING—FARCE.

Not offered, 1974-75.

A study of the problems confronted by the actor when performing in plays written in the past. Special problems of acting in farce, low comedy, and burlesque will be considered in this course. Students will be expected to act in scenes from various periods and translate the essence of the style into meaningful modern terms. Prerequisite: two courses in acting or equivalent.

Half course. Mr. Schroeder.

120. FUNDAMENTALS OF STAGE LIGHTING.

The use of stage lighting and its main functions: providing the proper degree of visibility and sense of realism, aiding composition, and creating the desired atmosphere. The qualities and methods of stage lighting. The basic instruments and control units. The layout. No prerequisite.

Half course, Module 2. Mr. Raviv.

121. PRINCIPLES OF STAGE MANAGEMENT.

A course in the techniques of stage management and the problems of planning and running rehearsals and performances. Students will receive practical experience by serving on the working crews and in managerial positions on Departmental productions. No prerequisite.

Half course, Module 1. Mr. Schroeder.

140. BASIC DIRECTING.

Not offered, 1974-75.

An introduction to the fundamentals of directing for the stage. Prerequisite: one course in acting or equivalent.

Full course. Staff.

142. INTERMEDIATE DIRECTING.

An intensive study of the problems of directing for the stage. Scene study and the short play. Prerequisite: at least two courses in acting; one course in directing; at least two courses in drama and/or theatre history. Equivalencies for these may be substituted. Instructor for 1974-75: Mr. Raviv.

Full course, Modules 3-4. Staff.

Theatre Art 150 through 159 are introductory proseminars in the history of the theatre in Western civilization. Each course constitutes a survey of some phase or period of Western theatre; altogether they would constitute a selective survey of theatre from the ancient Greeks to the present. There is no prerequisite for any of them. Topics vary from year to year. Recent and current topics include:

151. THE GREEK THEATRE.

A survey of the theatre of ancient Greece, including considerations of the origins of theatre, the form and substance of theatrical presentations, and study of several representative plays. No prerequisite.

Half course, Module 5. Mr. Schroeder.

153. THE MEDIEVAL THEATRE.

The development of the theatre in Europe in the middle ages. The birth of modern drama in the Catholic Church: the trope, Mystery, Miracle and Morality plays. The organization and methods of production. Cycles and "passion" plays in the late middle-ages. The secular theatre. No prerequisite.

Half course, Module 4. Mr. Raviv.

156. THE ENGLISH THEATRE—1660-1810.

A survey of the English theatre from 1660-1810, including study of theatre architecture, acting styles, scene and costume design, production methods, audiences, and representative plays. Some emphasis on the history of Shakespearian production. No prerequisite.

Half course, Module 2. Mr. Schroeder.

157. THE ENGLISH THEATRE—1810-1902.

A survey of the English theatre from 1810-1902, including study of theatre architecture, acting styles, scene and costume design, production methods, audiences, and representative plays. Some emphasis on the history of Shakespearian production. No prerequisite.

Half course, Module 3. Mr. Schroeder.

159. CONTEMPORARY POLITICAL THEATRE.

A study of the various forms in the contemporary theatrical scene devoted primarily to social and political issues of our time. Included in this study: "Guerilla Theatre", "Street Theatre", "The Living Theatre", "Bread and Puppet", etc. Plays, scenarios and group creations will be analyzed. Films will be shown for discussion. If possible, visits to actual performances will be arranged.
Half course, Module 5. Mr. Raviv.

168. BRECHT AND THE EPIC THEATRE.

The tradition of "epic" theatre productions. The political theatre of Piscator. Brecht's major plays and his theories concerning epic theatre. The productions of his own plays at the Berliner Ensemble. No prerequisite.
Half course, Module 1. Mr. Raviv.

181. EUGENE O'NEILL.

Not offered, 1974-75.

An intensive study of Eugene O'Neill, concentrating on his development as a theatre artist. Evaluation of his contribution to drama through reading and analysis of his major plays. No prerequisite.
Half course. Mr. Schroeder.

182. MODERN DRAMA: DEPARTURES FROM REALISM.

Not offered, 1974-75.

An in-depth study of 15 to 20 European and American plays representing the most important departures from the realistic formula of playwriting which developed towards the end of the nineteenth century. The theory and techniques of Expressionism, Surrealism, Epic Theatre, Theatre of the Grotesque, and Theatre of the Absurd, among others, will be analyzed against the background of general developments in theatrical production. The readings will include some important introductions and essays concerning the dramatic forms. No prerequisite.
Full course. Mr. Raviv.

183. THE THEATRE AS A VEHICLE FOR PROTEST AND PROPAGANDA IN TIMES OF SOCIAL CHANGE.

Not offered, 1974-75.

After a brief historical introduction tracing protest and propaganda in the theatre from Aristophanes to Brecht, such examples as Social Realism, the Living Newspaper, Epic Theatre, the Federal Theatre, Guerilla and Street Theatre, and the Negro Ensemble will be studied through plays and new modes of theatrical expression. No prerequisite.
Full course. Mr. Raviv.

184. THE GOLDEN AGE OF THE YIDDISH THEATRE.

A study of how the Yiddish theatre was born in Eastern Europe in the second half of the nineteenth century and its fast maturity until the nineteen twenties. The drama of Goldfaden, Gordin, Hirshbein and Pinsky. The rise and maturity of the American Yiddish theatre. No prerequisite.
Half course, Module 3. Mr. Raviv.

185. TENNESSEE WILLIAMS.

An intensive study of Tennessee Williams, concentrating on his development as a theatre artist. Evaluation of his contribution to drama through reading and analysis of his major plays. No prerequisite.
Half course, Module 4. Mr. Schroeder.

199. HOLY CROSS COURSES.

All Theatre Art courses taken at Holy Cross are number 199. Content is differentiated by title only. During each registration period, the student should consult the list of courses available in the Theatre Art Office.

204. ADVANCED TUTORIAL IN ACTING I.

Special study and coaching in acting problems for experienced actors only. Prerequisite: three or more courses in acting; at least one course in directing; at least two courses in drama and/or theatre history; and consent of instructor. Equivalencies for any of these may be substituted.
Variable credit.
Modules 1-2-3-4-5. Staff.

205. ADVANCED TUTORIAL IN ACTING II.

Continuation of Theatre Art 204. Prerequisite: Theatre Art 204 and consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

206. ADVANCED TUTORIAL IN ACTING III.

Continuation of Theatre Art 205. Prerequisite: Theatre Art 205 and consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

207. ADVANCED TUTORIAL IN ACTING IV.

Continuation of Theatre Art 206. Prerequisite: Theatre Art 206 and consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

240. ADVANCED DIRECTING.

Not offered, 1974-75.

Problems of interpretation and rehearsal of the full play, and the interaction between the director and the designers and stage manager will be considered. Prerequisite: Theatre Art 142, or equivalent, and consent of instructor.
Full course. Staff.

242. ADVANCED TUTORIAL IN DIRECTING I.

Special study and coaching in problems of directing for experienced directors only. Prerequisite: Theatre Art 142, or equivalent, and consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

243. ADVANCED TUTORIAL IN DIRECTING II.

Continuation of Theatre Art 242. Prerequisite: Theatre Art 242 and consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

251. THE ELIZABETHAN THEATRE.

Not offered, 1974-75.

An examination of the important documents — visual and literary — pertaining to the theatre during the Elizabethan era. The study will include all aspects of theatre production, the playhouse, actors, scenery, costumes and audience. An attempt will be made to reconstruct some actual productions of Elizabethan plays as they might have been produced during the time. Prerequisite: at least two courses in drama and/or theatre history.
Full course. Mr. Raviv.

281. SEMINAR: SPECIAL STUDIES IN RENAISSANCE DRAMA.

A seminar devoted to the intensive study of a small group of dramatists or a special dramatic problem of the Renaissance. Independent study and research is emphasized. *Topic for 1974-75: Marlowe and Jacobean Tragedy.* A study of the plays of Christopher Marlowe and selected plays by several Jacobean playwrights, including John Marston, George Chapman, John Webster, and John Ford. Prerequisite: consent of instructor.
Full course, Modules 1-2. Mr. Schroeder.

286. SEMINAR: IBSEN.

Not offered, 1974-75.

An intensive study of the major plays of Ibsen and criticism of his life and work. Consideration will be given to his development as an artist. Independent research and study is emphasized. Prerequisite: consent of instructor.
Full course. Mr. Schroeder.

290. CREATIVE DRAMATICS IN EDUCATION.

The technique and use of creative dramatics in the classroom. Appeal to the imagination and creativity, development of observation, and the insight into characters and situations. Pantomime, improvisation, and dramatization of poems, stories, and themes. No prerequisite. (Listed also as Education 230.)
Half course, Module 1. Mr. Raviv.

Russian 140. THE GOLDEN AGE OF RUSSIAN THEATRE.

Refer to description under Foreign Languages and Literatures.
Ms. Kriskijans and Mr. Raviv.

FILM STUDIES

PROGRAM FACULTY

Anthony W. Hodgkinson, Associate Professor Film Studies; Associate Chairman of Film Studies Program
William Chayes, Lecturer in Film Production

UNDERGRADUATE PROGRAM

The program in Film Studies is designed to enable the student to acquire a critical understanding and appreciation of our youngest art. A full understanding of Film involves two related activities: (1) the viewing, discussion and evaluation of a large number of significant works; and (2) initial attempts, through simple film and/or video production exercises, to express oneself in a technically demanding medium.

The emphasis of most courses is on the viewing/discussion/assessment aspect; they are designed to have particular reference to the historical and social impact of Film. The production courses are deliberately set at an introductory, elementary level; there is no intention of providing a professional training in either film or video.

There is no major offered in Film Studies at the present time.

COURSES

10. ELEMENTS OF FILM.

A survey of the varied techniques used in the making of all screen communications (film, television, video): the invention of the language; silent film narrative; editing, music; speech and sound. Lecture/screenings; term papers and readings. *Either this course, or 15, is a prerequisite for other Film Studies courses.* Open to Freshmen.

Half course, Module 1.
Half course, Module 5. Staff.

11. ASPECTS OF FILM HISTORY III.

Under this general heading, various facets of the 75 years of cinema will be explored in a series of lecture/screenings and discussions. Content varies each time the course is taught, and it may be taken more than once. Term papers and readings. Prerequisite: 10 or 15.

Full course, Modules 3-4. Mr. Hodgkinson.

12. FILM AND SOCIETY II.

A thematic exploration of the ways the cinema has reflected/affected its contemporary society. Content varies each time the course is taught, and it may be taken more than once. Lecture/screenings and discussions, term papers and readings. Prerequiste: 10 or 15.

Full course, Modules 3-4. Mr. Hodgkinson.

13. GREAT FILM DIRECTORS III.

A series of lecture/screenings in which the canon of work of various significant directors will be studied and assessed. The director varies each time the course is taught, and it may be taken more than once. Previous directors have been Preston Sturges and Luis Bunuel, and the intention this year is to deal with Stanley Kubrick. Prerequisite: 10 or 15, and consent of instructor.

Full course, Modules 1-2. Mr. Hodgkinson.

14. LITERATURE OF FILM.

A seminar in which some of the significant books of film theory, aesthetics, history etc. are studied in detail and in depth. Prerequisites: 10 or 15, plus one of 11, 12 or 13.

Half course, Module2.
Half course, Module 4. Mr. Hodgkinson.

15. THE FILM-MAKING TEAM.

In a series of lecture/screenings, the contributions to the final film of each of the major members of the studio team—writer, director, actor etc. are examined. *Either this course, or 10, is a prerequisite for other Film Studies courses.* Open to Freshmen.

Half course, Module 3. Mr. Hodgkinson.

88. DIRECTED READINGS.

A sequence of structured readings on a given topic approved and directly supervised by the instructor. Prerequisite: consent of instructor.

Variable credit.
Modules 1-2-3-4-5. Staff.

89. SPECIAL PROJECTS.

Independent research on a particular problem, or an original creative project, directly supervised by the instructor. Prerequisite: consent of instructor.

Variable credit.
Modules 1-2-3-4-5. Staff.

100. ELEMENTARY FILM PRODUCTION.

A practical workshop in Super-8mm film production. Student work will be analyzed and criticized. Prerequisite: 10 or 15.

Full course, Modules 1-2.
Full course, Modules 3-4.
Full course, Module 5. Mr. Chayes.

101. FILM/VIDEO PRODUCTION.

A practical workshop in which production both of Super-8mm films and 1/2" videotape may be explored at a slightly more advanced level than in Film 100. Prerequisite: 100 plus consent of instructor.

Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Chayes.

FACULTY

Members of the faculty and officers for 1974-75 are listed alphabetically with their titles, degrees and years at Clark University. Persons no longer on the faculty but who served during the previous year are included also.

President

MORTIMER H. APPLEY, Ph.D., President, and Professor of Psychology, B.S., The City College, New York, 1942; M.A., University of Denver, 1946; Ph.D., University of Michigan, 1950. (1974-)

Emeriti

HOWARD B. JEFFERSON, Ph.D. LL.D., L.H.D., Litt.D., President, Emeritus; A.B., Denison University, 1923; Ph.D., Yale University, 1929; LL.D., Denison University, 1948, Hillsdale College, 1952, Northwestern University, 1958; L.H.D., Colgate University, 1951, Assumption College, 1956; Litt. D., College of the Holy Cross, 1962; L.H.D., Clark University, 1967; LL.D., Emerson College, 1968. (1946-67)

KARL J. R. ARNDT, Ph.D., Professor of German, Emeritus (1950-1974)

CLAUDE W. BARLOW, Ph.D. Professor of Classics, Emeritus. (1947-72)

ESSE L. BULLOCK, Ph.D., Professor of Chemistry, Emeritus. (1926-59)

LYDIA P. COLBY, B.S., Registrar, Emeritus. (1932-66)

TAMARA DEMBO, Ph.D., Professor of Psychology, Emeritus. (1953-72)

GEORGE E. HARGEST, M.B.A., Associate Professor of Economics, Emeritus. (1942-71)

SHERMAN S. HAYDEN, Ph.D., Professor of International Relations, Emeritus. (1947-73)

ROBERT S. ILLINGWORTH, A.M., Ed.M., Professor of Speech and Drama, Emeritus. (1931-58)

VERNON JONES, Ph.D., Professor of Educational Psychology, Emeritus. (1926-68)

FREDERICK W. KILLIAN, LL.B., Associate Professor of Sociology, Emeritus. (1947-70)

DWIGHT E. LEE, Ph.D., L.H.D., Jacob and Frances Hiatt Professor of European History, Dean of the Graduate School, Emeritus. (1927-67)

JAMES A. MAXWELL, Ph.D., L.H.D., Professor of Economics, Emeritus. (1924-67)

RAYMOND E. MURPHY, Ph.D., Professor of Economic Geography, Emeritus. (1946-68)

THEODORE NICOL, Ph.D., Associate Professor of Romance Languages, Emeritus. (1946-69)

PERCY M. ROOPE, Ph.D., Professor of Physics, Emeritus. (1921-62)

SAMUEL VAN VALKENBURG, Ph.D., LL.D., Professor of Geography, Emeritus. (1927-29, 1932-62)

HENRY J. WARMAN, Ph.D., Professor of Geography, Emeritus. (1943-74)

Faculty and Officers of Instruction

DAVID ABRAHAM, Ph.D., Assistant Professor of English, B.A., Brooklyn College 1966; M.A., University of Massachusetts, 1968, Ph.D., 1973. (1973-)

VERNON AHMADJIAN, Ph.D., Professor of Botany, Dean of the Graduate School; Coordinator of Research. A.B., Clark University, 1952; A.M., 1956; Ph.D., Harvard University, 1960. (1959-68, 1969-)

PHYLLIS C. ALBERT, Ph.D., Visiting Lecturer in Jewish History. B.A., Tufts University, 1961; M.A., Brandeis University, 1964; Ph.D., 1972. (1972-)

HARRY C. ALLEN, JR., Ph.D., Professor of Chemistry, Chemistry Department Chairman, B.S., Brown University, 1949; Ph.D., University of Washington, 1951. (1969-)

ALBERT A. ANDERSON, Ph.D., Associate Professor of Philosophy. B.A., Morningside College, 1960; M.A., Boston University, 1963; Ph.D., Boston University, 1971. (1973-)

KARL O.E. ANDERSON, Ph.D., Professor of English. A.B., Harvard University, 1927; A.M., 1928; Ph.D., 1942. (1945-)

ROY S. ANDERSEN, Ph.D., Professor of Physics. A.B., Clark University, 1943; A.M., Dartmouth College, 1948; Ph.D., Duke University, 1951. (1960-)

KARL J.R. ARNDT, Ph.D., Professor of German. A.M., Washington University, 1928; Ph.D., The Johns Hopkins University, 1933. (1950-74)

RUTH S. ARNON, M.A. Visiting Lecturer in History. B.A., Stanford University, 1965; M.A. Stanford University, 1966. (1974-)

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ROBERT W. BAKER, Ph.D., Professor of Psychology, Director, Psychological Services Center. A.B., Hobart College, 1947; Ph.D., Clark University, 1953. (1954-)

GEORGE A. BALKO, JR., M.B.A., Assistant Professor of Management. M.E., Stevens Institute of Technology, 1947; M.B.A., New York University, 1952 (1956-)

RAYMOND E. BARBERA, Ph.D., Professor of Romance Languages, A.B., Brooklyn College, 1947; A.M., University of Arizona, 1948; Doctor en Letras, Universidad Nacional de Mexico, 1949; Ph.D., University of Wisconsin, 1958. (1953-)

PETER M. BARNETT, Ph.D., Assistant Professor of Art. B.A., Amherst College, 1963; M.A., Harvard University, 1965; Ph.D., 1972. (1970-)

TILTON M. BARRON, B.L.S., Librarian. A.B., Colorado College, 1937; B.L.S., Columbia University School Library Service, 1940. (1954-)

THOMAS C. BARROW, Ph.D., Professor (Affiliate) of American History. B.A., Harvard University, 1952; M.A., 1954; Ph.D., 1961. (1967-)

JAMES F. BEARD, JR., Ph.D., Professor of English. A.B., Columbia College, 1940; A.M., Columbia University, 1941; Ph.D., Princeton University, 1949. (1955-)

ROBERT N. BECK, Ph.D., Professor of Philosophy, Philosophy Department Chairman.A.B., Clark University, 1947; A.M., Boston University, 1948; Ph.D., 1950. (1948-67; 1968-)

THOMAS BERGSTRESSER, Ph.D., Visiting Assistant Professor of Physics. B.S., California Institute of Technology, 1960; Ph.D., University of California at Berkeley, 1966. (1973-)

LEONARD BERRY, Ph.D., Professor of Geography. B.Sc., University of Bristol, 1951; M.Sc., 1956; Ph.D., 1969. (1969-)

ROGER BIBACE, Ph.D., Professor of Psychology, Director Clinical Training Program. A.B., University of British Columbia, 1949; Ph.D., Clark University, 1957. (1957-)

GEORGE A. BILLIAS, Ph.D., Professor of American History. A.B., Bates College, 1948; A.M., Columbia University, 1949; Ph.D., 1958. (1962-)

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JOHN J. BRINK, Ph.D., Professor of Biochemistry. B.Sc., University of Orange Free State, 1955; B.Sc. (Hons.), University of Witwatersrand, 1956; Ph.D., University of Vermont, 1962. (1966-)

DONALD M. BROVERMAN, Ph.D., Professor (Affiliate) of Psychology. A.B., Union College, 1952; M.A., Clark University, 1956; Ph.D., 1958. (1964-)

ANNE BUTTIMER, SISTER MARY ANNETTE, O.P., Ph.D., Associate Professor of Geography. B.A., National University of Ireland, 1957; M.A., 1959; Ph.D., University of Washington, 1965. (1971-)

NELSON M. BUTTERS, Ph.D., Research Associate (Affiliate) in Psychology. A.B., Boston University, 1960; M.A., Clark University, 1962; Ph.D., 1964. (1971-)

GEORGE CAMOUGIS, Ph.D., Associate Professor (Affiliate) of Physiology. B.S., Tufts College, 1952; A.M., Harvard University, 1957; Ph.D., 1958. (1958-)

ROBERT F. CAMPBELL, Ph.D., Professor of American History. A.B., Yale University, 1939; A.M., Columbia University, 1940; Ph.D., 1947. (1946-57; 1960-)

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TAMARA DEMBO, Ph.D., Professor of Psychology, Ph.D., University of Berlin, 1930. (1953-72)

JOSEPH de RIVERA, Ph.D., Associate Professor of Psychology. B.A., Yale University, 1953; Ph.D., Stanford University, 1961. (1970-)

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THOMAS J. DOLPHIN, A.B., Director of The Evening College. A.B., Rutgers University, 1951. (1957-)

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EVELYN FULLER, M.Mu., Assistant Professor (Affiliate) of Music. B.Mu., Oberlin Conservatory of Music, 1953; M.Mu., 1954. (1967-)

WESLEY M. FULLER, M.Mu., Associate Professor of Music. B.Mu., Oberlin Conservatory of Music, 1953; M.Mu., Boston University, 1958. (1963-)

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STANFORD N. GERBER, Ph.D., Associate Professor of Social Anthropology and Sociology. B.A., University of Kansas City, 1955; M.A., 1957; Ph.D., University of Missouri, 1966. (1968-)

LAWRENCE GOLDBERG, Ph.D., Assistant Professor of Management. B.A., Brooklyn College, 1967; Ph.D., Brown University, 1972. (1972-74)

EMANUEL S. GOLDSMITH, Ph.D., Visiting Assistant Professor of Jewish Literature. B.A., CCNY, 1956; Ph.D., Brandeis University, 1972. (1971-)

RAYMOND GOLOSKIE, Ph.D., Associate Professor (Affiliate) of Physics. B.S. Brown University, 1953; M.A., Harvard University, 1955; Ph.D., Harvard University, 1961. (1973-)

HAROLD GOODGLASS, Ph.D., Professor (Affiliate) of Psychology. A.B., College of the City of New York, 1939; A.M., New York University, 1948; Ph.D., University of Cincinnati, 1951. (1956-)

ALLAN E. GOODMAN, Ph.D., Associate Professor of Government and International Relations, Government and International Relations Department Chairman. S.B., Northwestern University, 1966; M.P.A., Harvard University, 1968; Ph.D., 1971. (1970-)

ALBERT M. GOTTLIEB, Ph.D., Assistant Professor of Physics. B.S., Stevens Institute of Technology, 1965; M.S., Brandeis University, 1967; Ph.D., 1970. (1973-)

HARVEY A. GOULD, Ph.D., Associate Professor of Physics. B.A., University of California, Berkeley, 1960; Ph.D., 1966. (1971-)

ROCHELEAU Z. GRANGER, JR., A.M. in Ed., Director of Physical Education of Men. A.B., Clark University, 1938; A.M. in Ed., 1939. (1942-)

SANTE GRAZIANI, M.F.A., Associate Professor (Affiliate) of Art. B.F.A., Yale University, 1942; M.F.A., 1948. (1958-)

ALAN F. GUMMERSON, Ph.D., Assistant Professor of Economics. B.A., Grinnell College, 1965; Ph.D., University of Wisconsin, 1972. (1969-)

ALAN E. GUSKIN, Ph.D., Professor of Education and Sociology. B.A., Brooklyn College, 1958; Ph.D., University of Michigan, 1968. (1972-)

JUDITH T. GUSKIN, Ph.D., Assistant Professor of Education. B.A., Brooklyn College, 1959; M.A., University of Michigan, 1961; Ph.D., 1970. (1972-)

MARCEL GUT, Ph.D., Professor (Affiliate) of Chemistry. Ph.D., University of Basel, 1947. (1972-)

IAN D.K. HALKERSTON, Ph.D., Professor (Affiliate) of Endocrinology. B.Sc., University of Reading, England, 1941; Ph.D., Boston University, 1960. (1967-)

JUDITH P. HALLETT, Ph.D., Visiting Assistant Professor of Classics. B.A., Wellesley College, 1966; A.M., Harvard University, 1967; Ph.D., 1971. (1972-)

TAMARA K. HAREVEN, Ph.D., Associate Professor of American History. B.A., Hebrew University, Jerusalem, 1960; M.A., University of Cincinnati, 1962; Ph.D., Ohio State University, 1965. (1969-)

SERENA S. HILSINGER, Ph.D., Associate Professor of English. A.B., Douglass College, Rutgers, 1959; Ph.D., University of Connecticut, 1964. (1962-)

ANTHONY M. HODGKINSON, Associate Professor of Film Studies and Associate Chairman of Film Studies Program in the Department of Visual and Performing Arts. Gaddesden College, England. (1972-)

CHRISTOPHER HOHENEMSER, Ph.D., Associate Professor of Physics. B.A., Swarthmore College, 1958; Ph.D., Washington University (St. Louis), 1963. (1971-)

ROBERT HOLLINGER, Ph.D., Visiting Assistant Professor of Philosophy. B.A., Brooklyn College, 1966; Ph.D., University of Wisconsin at Michigan, 1972. (1972-74)

PIERRE L. HORN, M.A., Assistant Professor of Romance Languages. B.A., Brooklyn College, 1964; M.A., Columbia University, 1965. (1969-)

RICHARD A. HOWARD, Ph.D., Assistant Professor of Geography and Adjunct Professor of Biology. B.S., Iowa State University, 1962; M.S., University of California, 1965; Ph.D., University of Massachusetts, 1970. (1968-)

ROBERT C. HSU, Ph.D., Assistant Professor of Economics. B.A., National Taiwan University, 1960; M.A., Atlanta University, 1963; Ph.D., University of California, Berkeley, 1970. (1971-)

KENNETH HUGHES, Ph.D., Assistant Professor of German. B.A., Rutgers University, 1962; Ph.D., 1967. (1973-)

ROBERT M. HYDE, A.M., Executive Vice President. A.B., Rutgers University, 1947; A.M., University of Pennsylvania, 1949. (1954-74)

PAUL T. INGLEFIELD, Ph.D., Assistant Professor of Chemistry.B.S., University of Glasgow, 1962; Ph.D., University of British Columbia, 1966. (1967-74)

HARRY L. JACOBS, Ph.D., Professor (Affiliate) of Physiology. B.A., University of Delaware, 1950; M.A., 1951; Ph.D., Cornell University, 1955. (1967-)

H. WILLIAM JOHANSEN, Ph.D., Associate Professor of Botany. B.A., San Jose State College, 1955; M.A., San Francisco State College, 1961; Ph.D., University of California, Berkeley, 1966. (1968-)

DOUGLAS L. JOHNSON, Ph.D., Assistant Professor of Geography. B.A., Clark University, 1965; M.A., University of Chicago, 1968; Ph.D., 1971. (1973-)

SAMUEL E. JOHNSON, Ph.D., Assistant Professor of Zoology, B.S., Stanford University, 1966; Ph.D., 1972. (1973-)

ALAN A. JONES, Ph.D., Assistant Professor of Chemistry. B.A., Colgate University, 1966; Ph.D., University of Wisconsin, 1972. (1974-)

HARTMUT M. KAISER, Ph.D., Associate Professor of German. Ph.D., Brown University, 1968. (1971-)

DONALD D. KANE, M.A., Adjunct Associate Professor of Management, Associate Chairman, Department of Management. B.S., Long Island University, 1952; M.A., Columbia University, 1959. (1971-)

BERNARD KAPLAN, Ph.D., University Professor (Psychology). A.B., Brooklyn College, 1948; A.M., Clark University, 1950; Ph.D., 1953. (1953-)

GERALD J. KARASKA, Ph.D., Professor of Geography. B.S., Pennsylvania State University, 1954; M.A., George Washington University, 1957; Ph.D., Pennsylvania State University, 1962. (1969-)

ROGER E. KASPERSON, Ph.D., Associate Professor of Government and Geography, A.B., Clark University, 1959; M.A., University of Chicago, 1961; Ph.D., 1966. (1968-)

ROBERT W. KATES, Ph.D., Professor of Geography. A.M., University of Chicago, 1958; Ph.D., 1962. (1962-)

THOMAS H. KEIL, Ph.D., Associate Professor (Affiliate) of Physics. B.S., Caltech, 1961; Ph.D., University of Rochester, 1965. (1973-)

HELEN J. KENNEY, Ed.D., Professor of Education. A.B., Emmanuel College, 1944; M.Ed., Boston College, 1953; Ed.D., Boston University, 1959. (1968-)

JOHN F. KENNISON, Ph.D., Professor of Mathematics, Mathematics Department Chairman. B.S., Queens College, 1959; A.M., Harvard University, 1960; Ph.D., 1963. (1963-)

ROBERT W. KILMOYER, JR., Ph.D., Associate Professor of Mathematics. B.A., Lebanon Valley College, 1961; Ph.D., Massachusetts Institute of Technology, 1969. (1966-)

DANIEL R. KILTY, Ph.D., Lecturer in Management. B.A., St. Anselm's College, 1954; M.A., University of Pennsylvania, 1958; Ph.D., Indiana University, 1965. (1969-)

J. FANNIN KING, M.A., Associate Professor of Romance Languages, Advisor to International Students. A.B., Pomona College, 1936; A.M., Harvard University, 1937. (1946-)

ARTHUR F. KINNEY, Ph.D., Professor of English (Affiliate). B.A., Syracuse University, 1955; M.S., Columbia University, 1956; Ph.D., University of Michigan, 1963. (1971-)

JOSEPH KLEIN, D.D., Lecturer in Biblical Literature. B.A., Ohio State University, 1933; Rabbi and M.H.L., Hebrew Union College, Cincinnati, 1939; D.D., Hebrew Union College, New York City, 1963. (1969-)

DUANE S. KNOS, Ph.D., Professor of Geography. B.A., Upper Iowa College, 1947; M.A., University of Iowa, 1953; Ph.D., 1956. (1970-)

WILLIAM A. KOELSCH, Ph.D., Associate Professor of American History and Geography, University Archivist. Sc.B., Bucknell University, 1955; A.M., Clark University, 1959; Ph.D., University of Chicago, 1966. (1963; 1967-)

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IRENE KRISKIJANS, M.A., Visiting Assistant Professor of Russian. B.A., University of Connecticut, 1963; M.A., Columbia University, 1966. (1973-)

DONALD W. KRUEGER, M.F.A., Associate Professor of Art, Associate Chairman of Art program in the Department of Visual and Performing Arts. B.F.A., Kansas City Art Institute, 1950, M.F.A., 1952; M.S., Rhode Island School of Design, 1960. (1972-)

WILLIAM C. KVARACEUS, Ed.D., Professor of Education and Sociology, Education Department Chairman. A.B., Boston College, 1934; Ed.M., Harvard University, 1936; Ed.D., 1943. (1968-)

JAMES D. LAIRD, Ph.D., Associate Professor of Psychology. B.A., Middlebury College, 1962; Ph.D., University of Rochester, 1966. (1966-)

VIRGINIA LEGUIA, M.S., Assistant Professor (Affiliate) of Music (Flute). B.M., M.M., Juilliard School of Music. (1972-)

LAURENCE A. LEWIS, Ph.D., Associate Professor of Geography. B.A., Antioch College, 1961; M.S., Northwestern University, 1963, Ph.D., 1654. (1970-)

MITCHEL P. LICHTENBERG, Ph.D., Assistant Professor (Affiliate) of Secondary Education. B.A., Swarthmore College, 1959; M.A.T., Harvard University, 1960; Ph.D., Carnegie-Mellon University, 1972. (1970-)

WARREN LITSKY, Ph.D., Professor (Affiliate) of Microbiology. A.B., Clark University, 1945; M.S., University of Massachusetts, 1948; Ph.D., Michigan State University, 1951. (1967-)

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ACADEMIC CALENDAR 1974-1975*

1974

FALL SEMESTER
MODULES I AND II

Monday, September 2
Labor Day
Tuesday, September 3
Arrival of new students for orientation
Wednesday, September 4
Orientation continued
Thursday, September 5
New, Continuing, & Readmitted students registration (Modules 1; 1-2 & 2)
Friday, September 6
Classes begin (Modules 1 & 1-2)
Saturday, September 7
Class day - (same as Thursday)
Monday, October 7
Last day to submit applications to the Registrar for degrees which will be awarded on Wednesday, January 8, 1975
Tuesday, October 22
Between module break starts after last class. Module 1 exams will be given in class on Monday and Tuesday, October 21st & 22nd
Monday, October 28
Classes resume (Module 1-2) Registration and first class day for Module 2
Monday, November 18
Advance registration for Module 3-4
Wednesday, November 27
Thanksgiving Vacation
Monday, December 2
Classes resume at 8:30 a.m.
Tuesday, December 17
Last day of classes for Modules 1-2 & 2
Wednesday, December 18 - Saturday, December 21
Fall examinations
Saturday, December 21
Christmas vacation

1975

MODULES III & IV

Wednesday, January 8
Commencement (For students completing degree requirements in Modules 1 & 2)
Thursday, January 9
Orientation for New & Readmitted Students
Friday, January 10
Registration for all students (Modules 3; 3-4 & 4)
Monday, January 13
Classes begin (Modules 3 & 3-4)
Monday, February 24
Last day to submit application to the Registrar for degrees which will be awarded on Commencement Day, May 11, 1975
Friday, February 28
Spring Vacation starts after last class. Module 3 exams will be given in class the week of February 24th - February 28th
Monday, March 10
Classes resume (Module 3-4) Registration & first class day for Module 4
Monday, March 17
Advance registration for Module 5
Monday, April 14
Theses and dissertations due for May candidates for advanced degrees
Friday, April 25
Last day of classes for Modules 3-4 & 4
Saturday, April 26 - Wednesday, April 30
Spring examinations
Sunday, May 11
Commencement

MODULE V

Monday, May 12
Registration and first day of classes for Module 5
Monday, May 26
Memorial Day holiday
Friday, June 27
Last day of classes for Module 5
Saturday, June 28
Final examinations for Module 5

Clark University Bulletin 1975/1976

Clark University

The New England Association of Colleges and Secondary Schools accredits schools and colleges in the six New England states. Membership in one of the six regional accrediting associations in the United States indicates that the school or college has been carefully evaluated and found to meet standards agreed upon by qualified educators. Colleges support the efforts of public school and community officials to have their secondary school meet the standards of membership.

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Clark University

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The Undergraduate College

THE UNIVERSITY COLLEGE

The role of Clark University in undergraduate education is defined by its position as a small college dedicated to advanced learning within the context of the university. The university's emphasis upon intellectual and scholarly achievement and the extensive resources of its nationally recognized Graduate School provide unique advantages for the college. The university college concept seeks to integrate graduate and undergraduate education and to translate the high standards of the Graduate School for the university as a whole. The ultimate goal of the university college is to produce an autonomous learner. Programs are structured in such a way that the student will take increasing responsibility for his or her own learning.

In the spring of 1973, the university adopted the concept of the university college as the ideal toward which all undergraduate academic planning and program development should be directed. The college embraces the normal four undergraduate years and results in the B.A. degree or, if the student chooses and is accepted into an integrated undergraduate-graduate program, an M.A. degree.

INTRODUCTORY PROGRAM

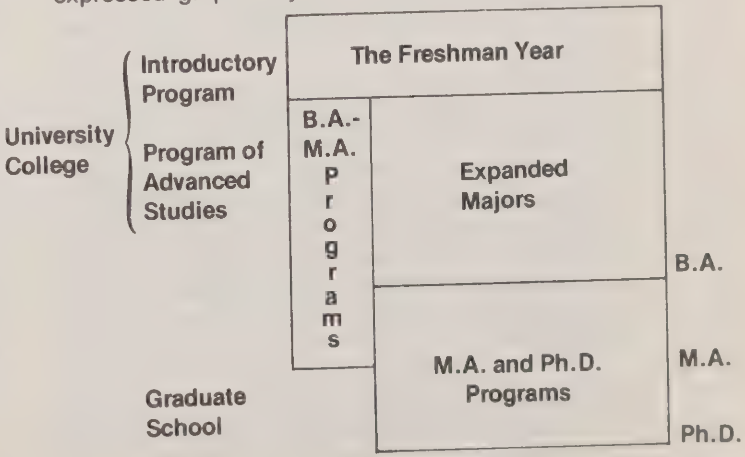
The Introductory Program currently being developed by a faculty-student planning committee is considering such issues as the need for introductory courses within the context of the various departmental and interdepartmental programs, the different backgrounds and needs of individual students, the need for courses which bridge disciplinary perspectives, the issue of academic acceleration into the Program of Advanced Studies, the development of specific skills, advisory systems and means for defining career and educational objectives. The program is still being developed and will be more fully implemented within the next academic year.

PROGRAM OF ADVANCED STUDIES

The Program of Advanced Studies leads to either the B.A. or M.A. degree and is composed of two major tracks. The *expanded major* involves study in the various departmental and interdepartmental programs of the college and results in the B.A. degree. The expanded major is not a departmental major in the traditional sense. Rather, it is a program of study which is anchored in a particular discipline but specifically builds in courses in related disciplines as an integral part of the major. Each major, therefore, becomes interdisciplinary in design. Ordinarily, multiple tracks within the major will be provided. A student will take from 50 to 80 per cent of his or her studies during the Program of Advanced Studies in the expanded major. This greater focus over the last three years will permit greater depth and sophistication in the student's chosen field of study.

Integrated *undergraduate-graduate programs* constitute the second track of the Program of Advanced Studies and lead to the M.A. degree. Enrollment in these programs is limited and requires formal admission. This ordinarily occurs at the end of the first year in the Program of Advanced Studies. These programs tend to be interdisciplinary in nature and have a strong career orientation. Over time, a network of such programs will become available to students in the university college.

The structure of the university college may be expressed graphically as follows:



The Academic Programs

DEPARTMENTAL MAJORS

Within the Program of Advanced Studies, a student may major in biology, chemistry, economics, English, foreign languages (the foreign languages major is designated: in French, in German, in Spanish, in Romance Languages, or in foreign languages according to the program chosen), geography, government, history, international relations, mathematics, music, philosophy, physics, psychology or sociology. A new interdepartmental major in Science, Technology and Society is also available. A major in studio arts is offered through a cooperative program with the School of the Worcester Art Museum. A major in theatre art is offered through a coordinate program sponsored by Clark University, Holy Cross College and Assumption College. Courses in black studies, classics, geology, management, criminal justice, Jewish studies, Russian and women's studies are offered, but departmental majors are not available.

INTEGRATED GRADUATE-UNDERGRADUATE PROGRAMS

The university recently inaugurated several new integrated undergraduate-graduate programs. These programs ordinarily begin during the junior year, continue for a period of approximately three years and result in an M.A. degree. Clark undergraduate students and transfer students both are eligible for these programs and must apply for admission to them. Formal application to the Graduate School is required after a given period in the program. The newly approved programs are comparative literature, environmental affairs and international development.

STUDENT-DESIGNED MAJORS

Any student can design his or her own major which focuses on a systematic body of knowledge not within the bounds of existing majors or departments. The student, with the advice of an advisory committee of three faculty members, will establish the major program which must then be approved by the Undergraduate Academic Board. Such majors must include a balance between upper and lower division courses and must be approved no later than the start of the second semester of the junior year. The senior year includes the satisfactory completion of some specific work (*e.g.,* senior thesis, an internship experience, senior tutorial) intended to integrate courses in the major and to demonstrate accomplishment.

DECLARATION OF THE MAJOR

The central role of the expanded major in the B.A. degree attaches considerable importance to the declaration of the major. A student declares his or her intent to major in one of several departments upon entering the Program of Advanced Studies. By the end of the first year in this program, the student should make a firm declaration of major. Changes in major after this point are possible but may prolong the undergraduate experience. Students are encouraged to seek faculty advice and give careful attention to their future program of study during the freshman year.

UNDERGRADUATE PROGRAMS

Freshmen and sophomores may choose any course designated by the department as open to them.

Freshmen and sophomores are admitted to courses designated by numbers with the numeral 2 only with permission of the instructor and the department chairperson concerned, to whom the student must present evidence of high class standing and/or adequate preparation.

Juniors and seniors may elect any courses designated by numbers beginning with 1 or 2, indicating respectively courses which are primarily for undergraduates or for advanced undergraduates and graduate students. The selection by juniors and seniors of these courses is subject to any conditions stated in the course description.

Undergraduates may be admitted to courses designated by numbers beginning with the numeral

3 (indicating courses which are primarily for graduate students) with the approval of the Dean of the Graduate School.

DIRECTED READINGS AND SPECIAL PROJECTS COURSES

Most departments offer directed readings or special projects courses which may be entered with the permission of the instructor concerned. Directed readings courses comprise a sequence of structured readings on a given topic approved and directly supervised by the instructor. Special projects courses involve independent research by the student on a particular problem, as in laboratory work or field study. Both types of courses are offered for variable course credit but not to exceed a full course except by petition to the College Board. The number of course credits awarded on the basis of work performed is determined at the end of the course. Students may take up to two full course credits in Directed Readings, Special Projects or some combination of the two in a given two-module period. There is no limit on the total number of such courses which may be counted toward the B.A. degree.

THE MODULAR CALENDAR

Clark University has adopted an academic calendar composed of five seven-week terms beginning in September and ending in June. The normal academic year for the student involves attendance at four of these five terms, usually Modules I-IV (September-May) Module V may be substituted for one of the first four modules should the student wish to be away for one of these terms, but the impact of such a change on the student's program should be carefully assessed.

During the fall of the 1975-76 academic year, the faculty has scheduled an evaluation of the modular calendar, and will, as a result of this evaluation, make a decision as to whether or not the modular calendar will be permanently instituted.

For dates, see the Academic Calendar at the back of this catalogue.

THE FIFTH MODULE

The fifth module is an extension of the normal academic year at Clark University. Registration is optional and open to all Clark students as well as to qualified non-Clark students. This seven-week module provides a wide selection of normal departmental and interdepartmental course offerings supplemented by a number of special programs and academic opportunities unavailable during the other four modules.

It is possible, for example, to take a full year of a foreign language in this seven-week term. International field study and internship opportunities are also available.

The faculty is composed of the resident Clark faculty and invited visiting lecturers from other institutions and the Worcester community. A variety of recreational and extra-curricular activities are also an integral part of the program.

Currently, Clark students may substitute the fifth module for any one of the first four modules, or they may accelerate their academic program by taking courses in the fifth module as an overload. Clark students who have registered for four full courses throughout Modules I-IV may receive a 20% reduction on tuition for Module V. In addition, Clark University dorm students may receive free dormitory accommodations during the fifth module, while Clark off-campus students may receive a reduced rate for dormitory space during the fifth module.

During the fall of the 1975-76 academic year, the faculty will review this module as part of its total evaluation of the modular calendar. At that time, a decision will be made as to whether or not the Fifth Module will become a permanent part of our academic calendar.

A catalog listing course offerings for the fifth module is available in the spring.

WORCESTER CONSORTIUM COURSES

Since Clark is a member of the Worcester Consortium for Higher Education, students may enroll for one course each module at either Anna Maria College, Assumption College, Holy Cross College, Worcester Polytechnic Institute, Worcester State College, University of Massachusetts Medical School, and Becker, Leicester, Quinsigamond and Worcester Junior Colleges. Courses at these institutions should not duplicate those taught at Clark and require the approval of the department chairperson or, where necessary, the Dean of the

College. Students enrolled in the day college may not enroll independently at other Consortium institutions and receive Clark credit.

NON-TRADITIONAL EXPERIENCES

Academic experiences outside the normal curriculum (*e.g.,* internship experiences, off-campus research, study at non-accredited institutions) are eligible for course credit. To qualify, an experience must involve an extension, embodiment or illustration in some significant way of previous or concurrent systematic academic work. It must also take place under competent supervision and the learning involved must be formally evaluated by a Clark faculty member. The goals and structure of the experience must be agreed to by the instructor and the student *prior* to the beginning of the experience. Course credit will not be given for work that duplicates previous course work or other prior educational experiences. Students seeking information on this topic should contact the Dean of the College or the Dean of Students.

ACADEMIC ACCELERATION

The university encourages academic acceleration for qualified undergraduate students. A student may earn the bachelor's degree in less than four academic years through a combination of Advanced Placement credit, overload course work, attendance in a fifth module during the normal academic year and participation in Summer Schools. No student may, except with the permission of the College Board, take overload work in his or her first two modules in residence unless the overload is the result of co-recommended or co-required one-quarter or one-half courses (*e.g.,* some science laboratory courses). Students may, after the first two modules in residence, take up to four and one-half courses over a two-module period. Academically qualified students (defined as three out of four courses with a B+ or better, and no D's, in all courses taken during the previous two modules) may, with the signature of the student's advisor or department chairperson, be eligible for further overload course work.

NORMAL PROGRAMS

The undergraduate normally carries a full program of four one-half courses in a given module. In general, a course meets three times weekly for a two-module period. Laboratory periods are usually three hours long. Students should consult their faculty advisor or major department when questions of course or program selection arise.

PARTIAL PROGRAMS

Under special circumstances, students may be permitted by the Deans of Students to register for a two-module program of less than three courses. Such students are designated as part-time students.

ORIENTATION

Freshmen and transfer students attend an orientation program held on the campus for several days before the academic year begins. The intent of this program is to assist students in registering for a program of studies and to familiarize them with the Clark and Worcester communities. Placement examinations will be given and opportunities will be provided for students to attend individual and group meetings with faculty and other students.

ACADEMIC ADVISING

At orientation and during the first year, new students are provided the opportunity to meet in groups and individually with faculty members in order to obtain advice regarding course program and related matters. Each student is encouraged to request a faculty advisor. Toward the end of their freshman year, students are asked to indicate their preference for advisor from the major department, and advising responsibility at that point is assumed primarily by the various academic departments.

ADVANCED PLACEMENT

Placement in advanced courses is determined by individual performance on special departmental placement examinations or, in some instances, on the Advanced Placement and Achievement Tests of the College Entrance Examination Board. Two course credits for certain courses completed in high school will be granted toward the bachelor's degree f a student has received a 4 or 5 on a College Entrance Examination Board Advanced Placement Test. Students who received a 3 on an Advanced Placement Test may be granted some amount of credit only at the discretion of the appropriate academic department.

REGISTRATION

Every student registers for a specific number of courses at the start of Modules I-II and Modules III-V. A special registration will be held for Module V. Notification of the dates registration occurs is given n advance; failure to register within the announced period occasions a late registration fee. Students are strongly urged to register at advance registration. While enrolled at Clark during the academic year, a student will receive credit only for work registered at or through Clark.

STUDY ABROAD

Students are able to integrate study abroad programs into their course of studies at Clark. Through the university's affiliation with the Institute of European Studies, campuses in Vienna, Freiburg, Paris, Nantes, Madrid, Durham and London are readily accessible to Clark students. For further nformation and to explore the possibilities of a study abroad program for a summer, one semester or an entire year, contact Mr. Schatzberg, Department of Foreign Languages and Literatures.

For information on Clark University's program in Guadalajara, Mexico for the Fifth Module, one semester or an entire year contact Mr. D'Lugo, Department of Foreign Languages and Literatures.

A foreign study listing is available in the Career Planning and Placement Office. Programs for study abroad must be approved by the College Board.

JEWISH STUDIES PROGRAM

Courses in Jewish Studies are offered at Clark as interdepartmental disciplines and within various departments including the Department of Foreign Languages and Literatures, Department of History, Department of Sociology and School of Geography. Independent nondepartmental courses are also offered. Courses included in the program are listed under *Jewish Studies* in the catalogue.

WASHINGTON SEMESTER PROGRAM

Clark participates in the Washington Semester program of the American University in Washington, D.C. Under the program, a small number of superior students may be nominated to attend the program, usually in the junior year, studying United States government in the nation's capital. Although any student may be interested in the program, the opportunity should be particularly attractive to students majoring in government, international relations, history, economics or sociology. A credit of four courses is given for the program toward the bachelor's degree at Clark. Inquiry and application should be made to the chairman of the Department of Government and International Relations.

SUMMER SCHOOL COURSES OTHER THAN CLARK'S

Credit toward a degree for study at a summer school other than the Clark Summer School must be approved by the Registrar no later than registration day of the following semester. Students are strongly advised to confer with the Registrar prior to taking summer school courses to assure acceptability of credit toward the Clark degree.

GUEST AND SPECIAL STUDENTS

The university provides for guest students from other colleges and universities who wish to study at Clark for one or two semesters and for special students who wish to take only a few courses without enrolling as degree candidates. Students enrolled as guest students should contact the Admissions Office. Persons interested in special student status should contact the COPACE Office.

NON-CREDIT AUDIT STATUS

Persons not enrolled as full-time Clark students who wish to audit courses on a non-credit basis are invited to do so. Approval of the instructor of the course is required. In limited-enrollment or sectioned courses, regularly enrolled Clark students are given preference for available openings. Registration is arranged through the Registrar's Office. A fee of $152 per course will be charged.

NOTE: Records for non-matriculating auditors are kept for only the semester in attendance. Transcripts are not issued at the conclusion of the course, nor at a later date.

Requirements for a Bachelor's Degree

GENERAL REQUIREMENTS

Course requirements: Credit toward the Bachelor of Arts degree is expressed in terms of courses. A course, normally two modules in duration, involves three class meetings of 50 minutes each and three to four hours of laboratory, where appropriate, per week. A course may also be offered at double-strength intensity over a one-module period.

Minimal academic performance: To graduate with the B.A. degree, a student must receive passing grades in the 32 full courses required for graduation; he or she must receive a C- or better in at least 24 of these courses. Equivalencies for students with fewer than 32 courses in residence will be established by the College Board.

For the purpose of transfer, a full course is equivalent to four semester hours credit.

RESIDENCE

Normally, at least one-half of the total number of courses required for a bachelor's degree, as well as at least one-half of the total number of courses taken for the fulfullment of the major, must be taken at Clark University. Of these, eight of the last 16 courses must be completed at Clark.

TOTAL COURSE REQUIREMENTS

Successful completion of a total of 32 full courses is required for the bachelor's degree.

GROUPS

Courses may be obtained at the undergraduate level in the following fields of instruction which, for administrative purposes, are known as "groups."

Group A. Science and Mathematics: biology, chemistry, experimental psychology, mathematics and physics.

Group B. Social Sciences: economics, education, geography, government, history, international relations, linguistics, philosophy, psychology and sociology.

Group C. Language and Literature: English, classics, comparative literature, French, German, Hebrew, Italian, Russian and Spanish.

Group D. Fine Arts: studio art, art history, music, theatre art and film.

MAJOR REQUIREMENTS

Major: A departmental major consists of from 12 to 19 courses taken from those designated by the department in the Program of Advanced Studies. No department may require a student to take more than 19 courses in the expanded major, but a student may take more than 19 courses if he or she meets the other requirements for graduation.

Academic Regulations

GRADES

Reports on the work of each student are made at the end of each course. At the time of final registration, each undergraduate student must elect one of two reporting patterns for each of his or her courses, unless the option has been explicitly restricted for that course. First, the student may elect to receive an A, B or C grade, with modifying symbols plus and minus, or D, or No Record. Second, he or she may elect to receive the letter P (indicating successful completion of the course at C- or better) or No Record. If the grading option is restricted by the instructor, the student may receive a Cr (indicating successful completion of the course at C- or better) or No Record. No Records do not appear on the student's permanent record.

The faculty accepts the following qualitative description of grades:

In reference to the Clark student body as a whole over the long run,

- A indicates work of distinction, of exceptionally high quality;
- B indicates good work, but not of distinction;
- C indicates satisfactory work;
- D indicates marginal work;
- NR indicates unacceptable work.

INCOMPLETES

A record of incomplete may be permitted by approval of the College Board or Deans of Students only when sickness or some other unavoidable circumstance prevents completion of the course. A record of incomplete incurred in Modules I-II must be made up no later than the following April 1; if incurred in Modules III, IV, V or summer term, it must be made up no later than the following October 1. If a course is not completed within the specified time, the record of Incomplete is changed to one of No Record.

CUMULATIVE SUMMATION OF GRADES

A yearly cumulative summation of the number of grades received in each grade category, compared with the institutional distribution of the grades, will appear on each student's transcript. There will be no calculation of a student's grade point average.

ELECTION OF THE PASS OPTION

The availability of the Pass option in virtually all courses is designed to help minimize the competitive aspects of grading for those who find competition harmful to learning. Some students may wish to elect a number of their courses on this basis.

All students should remember that the great majority of graduate and professional schools *have expressed a preference for graded transcripts and encourage applicants to have many graded courses.* Pre-professional students and those for whom graduate school is a goal should exercise caution in employing the Pass option. Similarly students who have interest in the attainment of honors such as Phi Beta Kappa and general course honors at graduation should exercise the Pass option cautiously.

RESTRICTION OF OPTION

A department may, with the approval of the Undergraduate Academic Board, restrict the grading option for its majors in the major program. An individual faculty member may, with the approval of the Undergraduate Academic Board, offer a course on a Cr/NR basis.

WITHDRAWAL FROM COURSES

A student may withdraw from any course at any time during the first four weeks of classes, regardless of the grade thus far attained in that course, providing that, after withdrawal, he or she is carrying no fewer than three courses. Withdrawal from courses during the last two weeks of classes requires permission of the College Board.

COURSE CHANGES

A student may enter a course without special permission, unless such permission is required, any time up to final registration at the end of the first week of classes. After the first week, a student may enter a course with the permission of the instructor up to two weeks after the beginning of classes in a single-module course, and up to four weeks after the beginning of classes in a two-module length course. Thereafter, a student may enter a course only with the permission of the instructor and the College Board.

CLASSIFICATION OF STUDENTS

All students who have not been required to withdraw at the end of the academic year will be promoted if they have satisfactorily completed the following number of courses:

To the sophomore class	6 courses
To the junior class	14 courses
To the senior class	22 courses

PROBATION

A student whose accumulated courses at the end of two modules are less than three (or less than two and one-half in the case of a freshman) will be reminded by the Dean that he or she is in jeopardy of being required to withdraw.

DISMISSAL

A student may be required to withdraw from the college by failing to complete successfully the following number of courses in a five-module sequence:

Introductory Program (freshman)	5 courses
Program of Advanced Studies	6 courses

PLAGIARISM

In order to insure academic integrity and to safeguard students' rights, all cases of plagiarism should be reported to the College Board. Such reports of plagiarism should be carefully documented, and the student accused of the infraction notified of the charge. Students found guilty of plagiarism are liable to suspension.

EXAMINATIONS

Final examinations are given at the end of each course in many college courses. Approximately one week is set aside for each examination period and an attempt is made to distribute the examinations for any individual student throughout this period. Absence from a final examination, except for the most compelling reasons, may result in a No Record in the course. Other examinations and tests may be given at any time during the course at the convenience of the instructor.

CLASS ATTENDANCE

The college has no class attendance requirements. However, instructors have the prerogative of establishing such requirements for their own courses.

LEAVES OF ABSENCE

A student who is in good standing may apply to the Deans of Students for a leave of absence, after which he or she may return to the university without formal application for readmission.

Honors and Awards

DEPARTMENTAL HONORS

A student may elect a program leading to a bachelor's degree with honors in a particular subjec at the beginning of the junior year and, in some cases, at the beginning of the senior year. Under th plan, the department appoints an honors advisor who assists the student in planning a unified program of courses for the junior and/or senior years. The program may include a maximum of six courses in which the student works with a large measure of independence under the supervision of the advisor. In the senior year, the student must pass a comprehensive examination given by the department.

Students may apply in writing to their major department for permission to take honors work, not later than May 1 of the sophomore year or, in some departments, in the junior year. Department approval is necessary for admission to such work. In exceptional cases and in certain departments, application may be made and admission approved by the department concerned as late as the first two weeks of the senior year but only with consent of the College Board.

Admission to an honors program does not relieve the student from any of the standing regulations. A student's candidacy for honors will be terminated at the end of any module in which he or she has not maintained a standard satisfactory to the department in which he is doing honors work. If candidacy is terminated for any reason, the amount of course credit to be allowed for honors courses will be determined by the College Board in consultation with the major department.

The department may recommend the student's graduation with honors, high honors or highest honors, the recommendation to occur at the conclusion of the honors program.

GENERAL HONORS

General Course Honors are determined by the College Board annually on the basis of 16 modules' work or its equivalent. Criteria such as grades, percentage of courses taken on P/NR and graded basis and number of courses at Clark are used for determining the awarding of General Honors. Ordinarily 3/4 of a student's record at Clark must be graded if he or she is to be eligible for General Honors.

PHI BETA KAPPA

The Society of Phi Beta Kappa, founded at the College of William and Mary in 1776, is dedicated to the recognition and encouragement of outstanding scholarly achievement in liberal studies. The Clark Chapter, Lambda of Massachusetts, was established in 1953. Each year, a limited number of juniors and seniors are elected to membership on the basis of distinction in programs which are clearly liberal in character, with due consideration of evidence, both formal and informal, of high scholarship and creativity.

Tuition and Other Charges

SUMMARY OF TUITION AND OTHER CHARGES MODULES I-IV ACADEMIC YEAR 1975-1976

Tuition	$3450
Room (Single $840, Double $740)	740
Board (19 meals $840, 10 meals $660, 5 meals $440)	840
Consolidated Fee	75
Student Activity Fee — $46.50 per semester	93
Sub-total for continuing students	$5198
Charges which apply to new students only:	
Contingency Deposit	$ 25
Orientation Fee	30
TOTAL	$5253

Other Fees

Health and Accident Insurance (optional)	$49.00
Application Fee (undergraduate)	15.00
Transcripts (no charge for the first one)	1.00

Deposits

Admissions Deposit (new students)	$100.00
Tuition Deposit (upperclassmen)	200.00
Dormitory Deposit	25.00
Key Deposit — Dormitory Room	5.00
Key Deposit — Mailbox	1.00

GENERAL INFORMATION

Tuition, board, dormitory charges and certain fees are due and payable prior to the beginning of each semester. These dates for 1975-1976 are August 15, 1975 for Modules I and II (Semester I) and December 12, 1975 for Modules III and IV (Semester II). Students are not permitted to register for any semester until all financial obligations have been satisfactorily arranged with the university. There is a late fee of $25.00 assessed against all accounts not paid in full by the August and December due dates. In addition, interest at the rate of 1 percent per month (annual rate, 12 percent) will be charged on all balances 30 days or more past due.

REFUND POLICY

Withdrawals are arranged in the Dean of Student's Office. A student who officially withdraws in writing during the first week of any semester is allowed a refund of 80 percent on tuition; during the second week, 60 percent; during the third week, 40 percent; during the fourth week, 20 percent; after the fourth week there is no refund. The Consolidated Fee and Activities Fee are refunded by the same formula. There is no refund on other charges, except board, when a student withdraws from the university.

When a student has left, but not withdrawn from the university on the advice of a doctor within the first four weeks of a semester, and a decision is made later that the student must withdraw, tuition refund is made retroactive to the date of the doctor's recommendation, based on the schedule described above. A detailed statement of the refund policy may be obtained in the General Office.

PROGRAM REDUCTION POLICY

A normal academic program is comprised of four courses during a two module period. Part-time status is allowed only with prior permission of the Dean of Students. If given permission to register for less than four units, a standard surcharge of $172.50 (10% of tuition) will be added to the prorated tuition charge. For example — the charge for three units would be $1,293.75 + $172.50 = $1,466.25.

CONSOLIDATED FEE

A fee of $37.50 per semester including matriculation, graduation, laboratory and health services fees is charged to all matriculated students regardless of the number of courses taken.

ORIENTATION FEE

$30.00 is assessed for all new students to cover food and other related costs during orientation.

CONTINGENCY DEPOSIT

All undergraduates are required to pay a $25.00 deposit to cover minor charges, such as property damage, which may be incurred during the year. They are billed each year for whatever charges are incurred; the balance is refunded upon completion of their studies.

DORMITORY DEPOSIT

A dormitory deposit of $25.00 is required each spring of upperclassmen to reserve a place in a dormitory. It is credited toward the dormitory charges. The deposit is forfeited if the student does not enroll for the specified semester.

STUDENT ACTIVITY FEE

A fee of $46.50 per semester, levied and administered by the Student Council is required of all matriculated undergraduates. It pays for admission to and participation in a wide range of cultural and recreational activities.

APPLICATION FEE

A fee of $15.00 must accompany the application for admission to the college. It is not refundable.

ADMISSION DEPOSIT

A deposit of $100.00 is required of applicants when they accept the university's offer of admission. It is credited towards charges for the first semester. The deposit is forfeited if the studen does not enroll for the specified semester.

TUITION DEPOSIT

A deposit of $200.00 is required of all students planning to return to the university for their sophomore, junior or senior years. It is payable by July 1, and is credited toward charges for the fall semester. The deposit is forfeited if the student does not enroll for the specified semester.

KEY DEPOSIT

A deposit of $5.00 for each room and $1.00 for each mailbox key is required, refundable upon the return of the keys. The deposit is forfeited if the key is lost, or is not returned within 30 days after the close of school or departure of the student from campus.

IDENTIFICATION CARD

Identification cards are issued each year to all students without charge. This card is your official college identification and should be carried at all times. Loss should be reported immediately to the General Office. There is a $3.00 replacement charge for lost IDs.

CLARK UNIVERSITY TUITION BUDGET PLAN

The university offers a budget plan which is designed for families who find it more satisfactory to budget college costs from monthly income as opposed to the traditional twice yearly payment system. Under this plan, annual college charges are divided into 10 consecutive monthly payments. The initial payment is due in May and the final payment will be due in February of 1976. The only fee for participation in this plan is $25.00. This fee includes the cost of automatic life insurance coverage guaranteeing payment of the balance of the budgeted amount to Clark University in the event of the death of the insured parent. This program is administered for Clark University by Academic Management Services in Pawtucket, Rhode Island. Information regarding this plan is mailed to all students who are offered admission to the university.

Student Services

DINING HALLS

Dining Halls in Little Commons and Jefferson Hall are operated for the convenience of students and staff of the university. Service is cafeteria style. The snack bar in Dana Commons is open to all members of the Clark community. A cafe where beer, wine and sandwiches are served is located in Dana Commons, and is open to members of the university community who have passed their 18th birthday.

KOSHER MEAL PLAN

A Kosher Meal Plan, organized by the Clark Chapter of Hillel, is available, at an additional charge, for students who wish to observe Kosher dietary laws. At the present time, the plan provides for evening meals only.

DORMITORIES

Freshmen are ordinarily expected to live in university dormitories. Upperclassmen usually have the option of living in dormitories or moving off campus into private apartments. A request to live on campus is considered binding for the academic year; exceptions, of course, are made if a student withdraws or takes a leave of absence.

HEALTH SERVICE

The University Health Service provides out-patient facilities for minor medical services to all students. A nurse-practitioner, a part-time nurse and two part-time physicians are in attendance. Other physicians, health specialists and hospitals are available in Worcester.

FRATERNITIES

Tau Epsilon Phi, Clark's only fraternity, maintains a house near the campus at 40 May Street. Its members are involved in numerous campus organizations and sponsor small dances which are open to the entire Clark community, as is the fraternity itself.

KEYS AND KEY SECURITY

Key Deposit: A deposit of $5.00 for each room key issued is required, refundable upon the return of the key. A $1.00 deposit is required for all mailbox keys, also refundable upon return of the key. The deposit is forfeited if the key is lost, or is not returned within 30 days after the close of school or departure of the student from campus.

I.D. Required: Clark I.D. card must be shown for issuance of keys.

Physical Education and Athletics

Programs are designed to stimulate and encourage students to wider participation in physical activities, to promote health and mental efficiency and to lead to continuing participation throughout life. Participation is voluntary.

INTERCOLLEGIATE ATHLETICS

For students with a reasonably high level of skill and a well-defined and strong interest in athletic competition, intercollegiate schedules are arranged in soccer, cross-country, golf, hockey, baseball and track for men; for men and women, in basketball, crew and tennis. Additional intercollegiate competition may be arranged as student interest warrants.

Clark University is a member of the National Collegiate Athletic Association, the Eastern College Athletic Conference, the New England College Athletic Conference and numerous sports associations.

INTRAMURAL ATHLETICS

The opportunity to gain some of the benefits of participation in competitive athletics is offered to all students through organized intramural competition in touch football, basketball, volleyball, tennis, handball, table tennis, paddle rackets and softball.

COED RECREATIONAL ATHLETICS

Students may participate in coed and recreational leisure-time activities including archery, badminton, basketball, fencing, golf, gymnastics, horseback riding, sailing, swimming, tennis, softball, volleyball and in several dance activities, including folk, square and modern dance. The same activities are available to men's and women's groups. (Off campus arrangements may be made for golf, sailing, horseback riding and swimming.)

Admission

FRESHMAN ADMISSION

Clark University welcomes applications for admission from men and women without regard to race, creed, color or national origin. Selection is competitive and is based primarily on academic promise as indicated by secondary school performance, recommendations and Scholastic Aptitude Test scores. Secondarily, decisions reflect consideration of the individual experience and particular circumstances unique to each candidate.

ENTRANCE REQUIREMENTS

In general, the completion of a minimum of 16 acceptable units of credit in a four-year secondary school program or its equivalent is required for admission to the freshman class. Such preparation typically includes four years of English; two or more years of any foreign language studied; two or more years of mathematics (three or more for those planning a science or mathematics major); at least one year each of social studies and natural science (more laboratory work for those planning a science major); and other credit electives, including the arts, recognized in the seconday school curriculum

SCHOLASTIC APTITUDE TEST

All applicants must submit by January of their final year of secondary school the results of the Scholastic Aptitude Tests as administered by the College Entrance Examination Board. Achievement Tests are not required, but candidates who have studied French or Spanish are advised that results of Achievement Tests in these subjects are used to help determine advanced placement.

EARLY ADMISSION

Applications from accelerating students are encouraged when supported by unqualified and enthusiastic school recommendations. Official records of all secondary schools must be submitted in every case.

EARLY DECISION

Realizing that many students do not decide on their first choice of college until well into their senior year in secondary school, Clark has established two application deadlines for Early Decision candidates. Any student who submits an application and registration fee of $15.00 by November 1, clearly indicating Clark as his/her first choice, will be notified by December 1. All other applications indicating Clark as first choice should be received by January 15, and will be acted upon by February 15. Although participation in Clark's Early Decision Plan does not preclude regular applications to other colleges, it does imply a commitment by the student to withdraw all other applications upon notification of acceptance. A deposit of $100.00, non-refundable, is required of accepted candidates.

REGULAR ADMISSION

For freshman admission in September, candidates should initiate an application as early as possible during the first semester of the final year in secondary school, and no later than February 1. An application fee of $15.00, non-refundable, must accompany each application unless a waiver is being requested.

NOTIFICATION OF ADMISSION AND DEPOSIT

Time of notification of admission to the ncoming freshman class is normally on or about April 15. Students who have applied for *early decision* will be notified on or about December 1 or February 15.

Upon receipt of a formal offer of admission, undergraduate candidates must indicate acceptance of the offer by making an admission deposit of $100.00, non-refundable, to reserve a place at the university. This deposit is credited towards the first semester charges.

DEFERRED ENROLLMENT

Students wishing to elect the deferred enrollment option must submit a request in writing. The tuition deposit becomes due on April 1 of the following year for September enrollment, or by December 1 for the following January. Students seeking deferred enrollment should be prepared to submit transcripts of work completed elsewhere, if appropriate.

ADVANCED STANDING

Freshmen may enroll with advanced standing upon presentation of a transcript for college-level work already completed. Additional credit or placement may be earned on the basis of Advanced Placement Test scores of 4 and 5. Scores of 3 are awarded credit at the discretion of the department concerned.

Further information concerning testing programs may be obtained from the student's college advisor or from the College Entrance Examination Board which may be addressed in the East at Box 592, Princeton, New Jersey 08540, and in the far West at Box 1025, Berkeley, California 94701.

CAMPUS VISITS AND INTERVIEWS

Candidates for admission are encouraged to visit the campus and are invited to write or call the Admissions Office for detailed information concerning schedules, organized tours, appointments and interviews. Although campus interviews are not required of applicants, we welcome the opportunity to arrange them for students wishing to visit Clark.

HOUSING ARRANGEMENTS

All single freshmen not living with their families are expected to live in university dormitories. Rooms are assigned by the Dean of Students during the summer prior to the arrival of the freshman class. Inquiries about housing should be sent to the Office of the College.

TRANSFER APPLICANTS

Clark welcomes applications for admission with advanced standing from students attending two- and four-year institutions. The majority of students admitted enter at the junior level; many do, however, transfer to Clark with sophomore and advanced freshman standing.

Of special interest to transfer candidates are the university's B.A./M.A. program options in Comparative Literature, Environmental Affairs, International Development and Social Change.

The application deadline is May 1 (December 15 for places available at mid-year).

TRANSFER REQUIREMENTS AND NOTIFICATION

All applicants for transfer are required to submit evidence of good standing, complete transcripts of all previous academic work, secondary level and beyond, including the Scholastic Aptitude Test if taken, and any other information requested by the Admissions Committee such as recommendations and course description catalogs. Decisions are announced as soon as possible depending upon completeness and scope of records.

TRANSFER CREDIT

Credit is normally given for academic courses previously taken at accredited colleges and universities and for Advanced Placement Test results as described above. Credit for courses at non-accredited institutions is granted on a provisional basis to be evaluated upon successful completion of two semesters of full-time work at Clark. No credit is given for any course completed with a grade lower than a C-minus.

Evaluation of credits for college courses completed elsewhere is made at the time of admission or upon receipt of final transcripts and is used in planning a course program and in provisional classification as a freshman, sophomore or junior. A maximum of 50 percent of both the Clark B.A. degree and the departmental major requirements may be accepted in transfer, and normally a minimum of two academic years at Clark is necessary for completion of degree requirements.

Undergraduate Financial Aid

GENERAL INFORMATION

Financial aid is allocated on the basis of financial need and academic performance and consists of scholarships, grants, loans and part-time employment. The Committee on Financial Aid assesses each student's financial circumstances on the basis of the computation system established by the College Scholarship Service of the College Entrance Examination Board, Princeton, New Jersey or the American College Testing Program, Iowa City, Iowa. The assessment takes into account family income and assets, age of parents, financial commitments to other dependents and members of the family and other special circumstances. It is expected by the university that a student's resources for education will come first from family resources and his own savings and earnings.

COSTS

Expenses at Clark vary from student to student, but an average student expense budget (1975-76) is as follows:

	Resident	*Commuter*
Tuition	$3450	$3450
Consolidated Fee	75	75
Student Activities Fee	75	75
Orientation Fee (Freshmen and Transfers only)	30	30
Contingency Fee (Freshmen and Transfers only)	25	25
Insurance (Optional)	50	50
Room and Board (19 Meal Plan and Double Room)	1580	
Books and Supplies - Average	150	15
Clothing, Laundry, Recreation, Incidentals	450	40
Travel	*	17

*A reasonable allowance should be budgeted for travel between the university and the student's home.

INDEPENDENT SOURCES OF ASSISTANCE

All applicants for financial assistance are urged to pursue independent sources of financial assistance. Scholarships are often awarded to graduating seniors by their high school and / or private scholarship agencies in students' local communities. Request additional information from your high school guidance office.

Residents of Massachusetts are expected to apply for a *State Scholarship* to the Board of Higher Education, 182 Tremont Street, Boston, Massachusetts. Entering freshmen may obtain application materials and further instructions from their high school guidance office. Clark upperclassmen should contact the Financial Aid Office. Out-of-state students should investigate the opportunity of using their state scholarship program at Clark.

A new and important source of federal financial assistance is now offered in the form of *Basic Educational Opportunity Grants.* These grants, which vary in amount up to $1,400 per year, are available to students who demonstrate financial need according to federal regulations. Entering freshmen should obtain applications and further instructions from their high school guidance office. Clark upperclassmen should inquire at the Financial Aid Office for additional information.

The *Guaranteed Student Loan Program* is designed primarily for middle income families who do not qualify for other types of financial assistance. For those who need additional help, it may also be utilized as a resource to supplement scholarship, grant and loan. Offered chiefly through lending institutions, this program is subsidized by federal funds. For those who qualify, the federal government will pay the 7% simple annual interest while the student is in college. Loans up to $2,500 per academic year are offered in most states. Total loans outstanding may not exceed $7,500 for an undergraduate student. Additional information and application materials are available at local banks. Clark University is also a lender under this program and can make loans directly to qualified students. Information for entering freshmen and upperclassmen may be obtained at the Financial Aid Office.

Veteran's Benefits may be available for service veterans and children of deceased and/or disabled veterans. Eligibility can be determined by contacting your local Veterans Administration Office.

Social Security Ecucation Benefits may be available for children whose parent(s) are deceased and/or disabled. Additional information is available at your local Social Security Administration Office.

Rehabilitation Assistance may be available for students who qualify for educational benefits. Information concerning rehabilitation services can be obtained at the State Rehabilitation Office.

CLARK UNIVERSITY FINANCIAL ASSISTANCE

Clark University makes a commitment to entering freshmen and thenceforth from year to year as long as they continue to show financial need. Although any student who enters Clark may apply for assistance as an upperclassman, guarantees are made only to those needy students who received aid their first year.

Assistance at Clark is "packaged" in the form of scholarship, loan, grant and employment from the following sources:

Jonas Clark Scholarships — a portion of the university income is reserved for this purpose and gifts from alumni, parents and friends provide additional scholarship funds.

Supplemental Educational Opportunity Grants — part of a federal program of assistance to college students demonstrating exceptional financial need. Continued support from this fund is contingent upon annual congressional allocations.

National Direct Student Loans — long-term loans which bear no interest until nine months after a student ceases to be at least a half-time student at an institution of higher education. At that time, interest begins to accrue at the rate of 3% on the unpaid balance. A person borrowing from this fund will repay the amount in equal installments of at least $30 per month principal over an extended repayment schedule. Continued support is contingent upon annual congressional allocations.

Student Employment — available during the summer and part-time during the academic year.The basic source of funds for employment is the federal College-Work-Study Program. Jobs, offered as part of the package of financial assistance, and placement are handled by the Financial Aid Office.

Most scholarships awarded by the university are designated Jonas Clark Scholarships. Funds for these scholarships are derived from university income and from endowed funds as follows: Because of the various restrictions placed on these funds, it is the policy of the university to select eligible recipients. Students should not apply directly.

The Reginald Bryant Allen Fund
The Alumni Group Scholarship
The B'nai B'rith Scholarship
The Gertrude and William Brodie Award
The Reina and Isidore Chaiklin Scholarship Fund
The Charles W. and Annie L. Bruninghaus Fund
The Clark University Faculty Women's Club Scholarships
The Theodore T. and Mary E. Ellis Fund
The Albert C. Erickson Scholarship
The A.D. Ross Fraser Scholarship
The Aaron Fuchs Memorial Scholarship Fund
The Paul S. Goldman Memorial Scholarship
The Bertram L. and Bessie T. Handleman Fund
The Frank H. Hankins Scholarship
The High School Basketball Tournament Scholarship
The Gertrude and Eva Hillman Scholarship
The Frances Tufts Hoar Fund
The Gordon A. Hubley Fund
The M. Hazel Hughes Scholarship
The George N. Jeppson Scholarship Fund
The Dr. Edmund Randolph Laine Scholarship Fund
The David Ashley Leavitt Memorial Scholarship Fund
The Levi Knowlton Fund
The Elizabeth T. Little Scholarship Fund for Women
The Homer Payson Little Scholarship in Geology
The Livermore and Ambulance Drivers Scholarship

The Robert H. Loomis Scholarship
The National Council of Jewish Women Scholarship
The Alice Friend Newton Memorial Scholarship
The Abraham Persky Scholarship Fund
The Charles B. Randolph Fund
The Helen Brewster Randolph Memorial Scholarship
The Jennie L. Richardson Scholarship
The William Richardson Scholarship
The Sanford Memorial Scholarship
The Samuel Schanberg Memorial Scholarship Fund
The Fredric T. Sewall Scholarship Fund
The Henry L. Signor Scholarship
The Benjamin R. and Grace F. Vandeford Student Aid Fund
The Whitman Scholarship
The Henry A. Willis Scholarship

APPLICATION PROCEDURES

In addition to filing an application for admission, all freshman candidates applying for financial assistance must submit a completed Parents' Confidential Statement to the College Scholarship Service by February 1 and direct that a copy be forwarded to Clark University. The Parents' Confidential Statement may be obtained from the secondary school guidance office. Offers of financial assistance will be made within a few days of acceptance to the university. Early Decision candidates should file the Parents' Confidential Statement by November 1.

Prospective transfer students who are requesting financial assistance should submit the Parents' Confidential Statement to the College Scholarship Service at the same time application is made for admission. Award notification will be made concurrent with acceptance to the university, if possible; P.C.S. processing takes approximately four weeks. Applicants will not be required to post an admission deposit before receiving a financial aid decision.

Upperclassmen must reapply annually for financial assistance by submitting an updated Parents' Confidential Statement to the College Scholarship Service by April 1. In addition, a copy of the parents' previous year's income tax return (Form 1040) must be filed with the Financial Aid Office by April 30. Assistance is renewed as long as the applicant continues to demonstrate financial need.

The Graduate School

GENERAL INFORMATION

Clark University was initially established in 1887 as the second graduate institution in America. Its faculty and graduates have endowed the university with an impressive record of accomplishments through the years. Under the administration of the Graduate Board, Clark offers programs leading to master's and doctor's degrees to qualified holders of a bachelor's degree or its equivalent of attainment.

Master of Arts degrees are offered in the fields of biology, biomedical engineering (in cooperation with Worcester Polytechnic Institute), chemical physics, chemistry, economics, education, English, geography, government, history, international relations, mathematics, physics and psychology. The Master of Business Administration degree is offered by the Department of Management. The Master of Public Service degree is offered by the Criminal Justice Program and the Public Health Program.

Doctor of Philosophy degrees are offered in biology, the biomedical sciences (in cooperation with the Worcester Foundation for Experimental Biology and Worcester Polytechnic Institute), chemistry, chemical-physics, economics, geography, history, mathematics, physics and psychology. A Doctor of Education degree is offered by the Department of Education.

Post-doctoral training is conducted in geography, psychology and the sciences. Inquiries should be addressed to the chairman of the department concerned.

Departments which do not at present accept candidates for graduate degrees may offer courses which are suitable for inclusion in a program of graduate study.

Scholarships, fellowships and assistantships are listed at the end of this section. Additional information concerning departments and their offerings will be found in the section entitled "Departments and Courses."

NQUIRIES

Inquiries by students in American institutions concerning specific programs of graduate work should be addressed to the chairman of the department concerned. Please check catalog section, "Departments and Courses" for proper mailing address. Inquiries by foreign students should be addressed to the Dean of the Graduate School.

ADMISSION TO THE GRADUATE SCHOOL

Admission to the Graduate School may be granted only by the Dean of the Graduate School acting for the Graduate Board on the recommendation of a department of the university. Admission to the school does not imply admission to candidacy for a degree.

Application: A prospective applicant from an American institution should communicate with the department in which he expects to do his major work. If he is encouraged by the department to make application, he will be provided with an application form which, accompanied by a $20 application fee should be returned to the chairman of the department. In addition, the applicant should arrange to have sent to the chairman of the department concerned an official transcript of all undergraduate and any subsequent academic work, and three letters of recommendation from persons who are competent to judge his qualifications for graduate study.

Departments may request the submission of additional material, and most require a record of attainment in the Graduate Record Examination given by the Educational Testing Service, Princeton, New Jersey. All applicants are urged to take, and to submit, the results of the Graduate Record Examination verbal, quantitative and advanced tests.

A foreign student, if encouraged by the Dean to make formal application, should provide a certified English translation of his official record (if not in English), evidence of English proficiency (TOEFL), at least two letters of recommendation and a statement concerning his financial resources or agency support.

Applications for both admission and for financial aid should be completed not later than February 15 if the applicant intends to begin his studies the following September. Applications for admission may be submitted, however, throughout the year.

Admission: Admission to the Graduate School is granted for entry only at a specified time and lapses if the student fails to enter at that time. Admission as a part-time graduate student may be granted to qualified applicants who cannot devote full time to study, upon recommendation of the department.

Application for regular admission should be made through the department concerned. Application for admission as a *special status graduate student* (not in a degree program) should be made through the Registrar's Office.

If a student, when admitted, was a candidate for a degree elsewhere, he must arrange upon receipt of that degree to have a supplementary transcript, including a notation of the degree conferred, sent directly to the Dean of the Graduate School.

MASTER OF ARTS

Residence: An academic year (8 semester courses) of study in residence is a minimum requirement for a master's degree. Residence study is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the university faculty.

Foreign Language: A reading knowledge of a foreign language may be required of candidates for the degree of Master of Arts at the discretion of the major department. Language or other special requirements are included in the department announcements in the catalog.

Candidacy: Application for admission to candidacy for a master's degree must be filed with the Dean of the Graduate School not later than the first week of the last full semester which the student expects to spend in residence as a candidate for his degree. Forms are obtainable at the Registrar's Office.

Applications will be considered by the Graduate Board when the student has completed one semester of full-time graduate work or its equivalent in residence at the university and obtained the written endorsement of his major department.

Candidacy for the degree of Master of Arts is valid for four years after admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years on vote of the Graduate Board.

Course and Examination Requirements: Each student must meet a minimum requirement of 10 semester courses, and his program must be approved by the chairman of the department. One of his courses may be a research course devoted to the preparation of his thesis. Credit for a maximum of two courses of course work at another institution may be approved by the Graduate Dean, acting for the Graduate Board, upon the recommendation of the department.

Each candidate must make a satisfactory record in such written examinations as may be required by the major department and in a final oral examination by a committee of three or more, one of whom must be a member of the Graduate Board.

Thesis: The thesis is written on a topic in the field of the student's special interest under the supervision of a member of his major department and in a style, length and format that is appropriate to the problem being researched. The ribbon copy of the thesis, a precis approved by the supervising instructor and an academic history must be deposited in the Registrar's office not later than three weeks before the date of the commencement at which time the degree is to be conferred. At least one additional copy of the thesis and the precis must be delivered to the major department which may require more than one copy. The precis may not exceed 75 words in length. The title page, precis and academic history forms are obtainable from the Registrar's Office. The ribbon copy of the thesis must be typed as prescribed in "The Master's Thesis." These instructions are available at the Registrar's Office.

The thesis is deposited by the Registrar in the university library. The precis is printed in an annual publication, *Dissertations and Theses.*

Diploma Fee: This fee for the Master of Arts degree is $25.00. It covers the cost of the diploma, publication of the precis in the booklet *Dissertations and Theses* and binding of the library copy. It is payable when the thesis is deposited with the Registrar. Students who do not write a thesis, including those receiving the degree on the alternative program, must pay this fee no later than the date on which theses are due in the Registrar's Office.

Alternative Program: A candidate for the degree of Master of Arts may be recommended for the degree without a thesis when he has passed the preliminary doctoral examination.

Non-Resident Students: Students who have completed all formal university and departmental residency requirements are required to pay a non-resident fee of $100.00 per semester.

MASTER OF ARTS IN EDUCATION

The residency, candidacy, course, examination and diploma fee requirements are the same as those listed for the degree of Master of Arts.

Thesis: Students may choose one of three options, subject to the approval of the Department of Education. They may choose to: 1) prepare a thesis as required for the M.A. degree; 2) elect two additional subject-matter courses; or 3) elect a research-seminar in which papers are prepared and presented to fellow students and staff.

Further information concerning the degree of Master of Arts in Education may be found in the catalog section, "Departments and Courses," listed under the Department of Education.

MASTER OF BUSINESS ADMINISTRATION

This degree is offered through the Department of Management. For further information, see the catalog section "Departments and Courses," listed under the Department of Management.

MASTER OF PUBLIC SERVICE

This degree is offered through the Criminal Justice Program and the Public Health Program. For further information, request a catalog from the College of Professional and Continuing Education, Clark University.

DOCTOR OF EDUCATION

The program leading to the degree of Doctor of Education emphasizes human development and learning as it relates to curriculum, instruction and evaluation and in the sociology of education. The requirements for this degree closely parallel those for the degree of Doctor of Philosophy (see below). See catalog section on Department of Education for further information.

DOCTOR OF PHILOSOPHY

Only such candidates as give evidence of general proficiency, power of investigation and high attainments in the special fields in which their major subjects lie will be encouraged to proceed to the degree of Doctor of Philosophy.

Residence: The minimum requirement is one year of full-time study (8 semester courses beyond the M.A.), or its equivalent in part-time work, in residence which is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the university faculty.

If the degree of Master of Arts has been earned at Clark, this requirement is in addition to the residence requirement for that degree.

Foreign Language: Each graduate department sets its own language or related requirements as the student's field of research may demand, and must report such requirements in each case to the Dean of the Graduate School. If a language is required either the Educational Testing Service Foreign Language Tests or on-campus testing are employed at the discretion of the department.

Preliminary Examination: Upon completion of preparation in his fields of study a prospective candidate takes a preliminary examination set by his major department. This examination may be written or oral, or a combination of both. The chairman of the department may invite non-members of the department from within or without the university to participate in the examination.

Candidacy: An application for admission to candidacy should be filed when the applicant has: 1) completed two full academic years of graduate work, or its equivalent in part-time work, including one year at Clark University; 2) completed the departmental requirements in a foreign language; 3) passed a preliminary examination in his chosen field of study; 4) obtained the written endorsement of his major department. Application forms are obtainable at the Registrar's Office.

Candidacy for the degree of Doctor of Philosophy is valid for four years after admission to candidacy. For satisfactory reasons, candidacy may be extended once for an additional period of three years by vote of the Graduate Board.

Dissertation: A dissertation which is expected to make an original contribution to some special field of knowledge is required of each candidate. The dissertation, approved by the chief instructor or dissertation committee, is laid before the examining committee at the final oral examination.

An abstract of the dissertation, not exceeding 600 words in length, and a precis, not exceeding 75 words, both approved by the instructor or committees under whom they were written, are also required.

Four weeks before the degree is to be conferred, the ribbon copy of the dissertation, together with two official title pages, an academic history, the ribbon copy of the abstract and of the precis, each in a form prescribed, must be delivered to the Registrar. At the same time, one or more copies of the dissertation and of the abstract may be required by the major department. The title pages, precis and academic history forms are obtainable at the Registrar's Office. The ribbon copy of the dissertation must be typed as prescribed in "The Doctoral Dissertation" and "Suggestions for the Preparation of Doctoral Dissertations for Microfilming." These instructions are available at the Registrar's Office.

The Registrar deposits the dissertation and the abstract in the university library where they remain permanently. A microfilm copy of each dissertation is made by University Microfilms, Inc., of Ann Arbor, Mich., and is available for duplication by them on request. The abstract is printed in *Dissertation Abstracts;* the precis is printed in an annual publication, *Dissertations and Theses.*

Articles published in referred journals will be accepted in lieu of a dissertation provided guidelines established by the Graduate Board are met.

Final Examination: The final examination is oral and lasts for at least two hours. Additional written examinations may be given if the major department so directs. The candidate is expected to defend his dissertation and, at the discretion of the examining committee, may be questioned on the entire special field of his study. The oral examination is conducted by a committee of at least four members, composed of the chairman of the department, at least one other member of the Graduate Board, and such members of the department and non-members from within or without the university as the chairman may appoint. The chairman notifies the Dean of the Graduate School, at least one week in advance, of the time and place of the examination and the composition of the committee. The Dean is authorized to invite any person from within or without the university to be present and to assist in the examination.

Diploma Fee: This fee for the Doctor of Philosophy degree is $85.00. It covers the cost of the diploma, hood, publication of the precis in the publication *Dissertations and Theses,* publication of the abstract in *Dissertation Abstracts* and binding of the library copy of the dissertation. It is payable when the dissertation is deposited with the Registrar.

Non-Resident Students: Students who have completed all formal university and departmental residency requirements are required to pay a non-resident fee of $100.00 per semester.

POST-DOCTORAL STUDY

Post-doctoral students are classified in three categories: *Honorary Fellows* who are visitors for varying lengths of time, always more than a few days, who wish to observe activities of a department, to study or to carry on research, but without formal teaching duties or support by the university; *Research Associates* who work full-time with designated members of the university staff on research projects, normally supported by grants, without formal teaching duties but with some responsibility for directing laboratory assistants; and *Trainees* who enroll in a formally offered post-doctoral training program.

The Honorary Fellow and Research Associates enjoy faculty status, although the extent to which faculty privileges may be granted may be restricted by availability of space and other resources.

GRADUATE SCHOLARSHIPS, FELLOWSHIPS AND ASSISTANTSHIPS

Graduate fellowships and scholarships are provided for well-qualified graduate students by the university from endowed funds and from other sources. Financial aid to graduate students is available also in the form of grants from a number of special funds, and in some departments, from sponsored research grants. A limited amount of part-time employment is available in the various offices and departments of the university. Students who receive awards must obtain permission from the department before accepting employment.

All applicants for admission who request financial assistance are required to file a Student Financial Statement with the College Scholarship Service as part of their application. This form, along with specific instructions, should be requested by contacting the Graduate School Office at Clark University. Financial aid is not necessarily based on an evaluation of the student's need. However, a portion of the assistance offered may be in the form of National Direct Student Loans or College Work-Study employment. Both of these federal programs require that a student demonstrate financial need by completing the Student Financial Statement.

APPLICATION

Application for a scholarship or fellowship to begin in September should be made before February 15 to the chairman of the department in which the applicant expects to do his major work. Late applications, after endorsement by the department, go to the Graduate Dean for final approval.

RESEARCH FELLOWSHIPS

These fellowships may be awarded to graduate students who have fulfilled their residence requirements and who are pursuing a full-time doctoral program on campus.

TEACHING ASSISTANTSHIPS

There are three categories for Teaching Assistantship appointments:

1. *Part-time Lecturer* — a non-probationary, part-time faculty position which does not lead to consideration for tenure or faculty fringe benefits (TIAA, vacation, etc.). The student is responsible for a small class and should have considerable independence over all aspects of teaching and grading. He will be under the general supervision

and direction of a senior faculty member.

This category is reserved for the advanced student who has manifested clearly his skill in teaching and is qualified and experienced in the subject he will teach. The student should be accorded as many faculty privileges as possible, *e.g.*, attending department meetings and having office space. Stipend for this position is $3,200 for eight months.

2. *Teaching apprentice* — students with prior teaching experience, either as an undergraduate or as a graduate assistant. Responsibilities include conducting discussion sections for a course, supervising laboratory sections, running tutorial sessions, grading papers and projects and discussing these with the undergraduate students.

The student in this category should be under the direction of a professor who would assume responsibility for his training as a teacher. Stipend for this category is $3,000 for nine months.

3. *Teaching Assistant* — students with little or no teaching experience. Responsibilities include tasks that allow them to observe experienced teaching assistants or instructors and learn their pedagogical methods. Duties are assigned on a job basis and may include assisting other senior TAs, setting up and tearing down laboratory equipment and doing a variety of other tasks associated with teaching a course or section.

The assistant may grade examinations only if he is part of a general grading team of assistants or under the direct supervision of a senior TA or instructor. Stipend for this category is $2,800 for nine months.

The time commitment for each category is approximately half-time. Tuition will be remitted on all three categories. The number of hours of study an assistant at any level takes in addition to his teaching responsibilities should be decided by the department chairman with overall supervision from the Graduate Dean. The Internal Revenue ruling which states that payment for teaching is non-taxable provided it is a requirement for an advanced degree is still in effect, although we have been informed that some cases at other schools have been questioned. If a student chooses to have tax withheld, he is usually entitled to a tax refund when he files with the Internal Revenue Service.

Note that the departments of Biology, Chemistry, Economics, Geography, Government, History, Mathematics, Physics and Psychology require teaching experience for graduate degrees. See the departmental announcements in the catalog section on "Departments and Courses."

ASSISTANTSHIPS

In several departments, assistantships are available. They involve a variety of services including research with stipends to correspond, and usually provide the student with experience which will be useful in his later professional work.

GRADUATE FELLOWSHIP AND SCHOLARSHIP FUNDS

Stipends for fellowships and scholarships are provided by:

The Alumni Association Fund, provided by alumni who hold the degree of Doctor of Philosophy to benefit students studying for that degree.

The George S. Barton Fund, a bequest from the Honorable George S. Barton of Worcester, to be used for the benefit of native-born citizens of Worcester.

The Elnora W. Curtis Fund, a bequest from Dr. Elnora W. Curtis, A.M. 1908, Ph.D., 1910, for the benefit of graduate students.

The Eliza D. Dodge Fund, to be granted to graduate students of limited means who are engaged in research work.

The Henry Donaldson Jordan Award in History for high standard of scholastic achievement, and qualities of character which will be valuable in the training of teachers.

The Joseph F. Donnelly Memorial Fund, a bequest from Lucretia F. Donnelly to help men who are enrolled in a course leading to the degree of Doctor of Philosophy.

The John White Field Fund, established by Mrs. Eliza W. Field to provide for the minor needs of a scholar or fellow.

The Austin S. Garver Fund, a bequest from Austin S. Garver, member of the Board of Trustees from 1908 to 1918.

Graduate School Scholarship Fund, a bequest from Alexander H. Bullock, a member of the Board of Trustees from 1926 to 1946 and president of the board from 1938 to 1946.

The George Frisbie Hoar Fund, the gift of Andrew Carnegie in honor of the second president of the university's Board of Trustees.

The Myers Fund, a gift of George E. Myers, Ph.D., 1906, to assist graduate students to do research in education and psychology.

The Charles H. Thurber Fund, provided by Charles H. Thurber, member of the Board of Trustees from 1913 to 1938 and president of the board from 1919 to 1937.

GRADUATE LOANS

Loans, bearing interest at three per cent per year after completion of residency, are available for full-time graduate students upon registration. Applications are available at the Graduate School Office.

Federal funds are available for Graduate Students at Clark University in the form of National Direct Student Loans. The maximum amount a student may borrow in any one academic year is $2,500. The total amount a student may borrow as an undergraduate and graduate is $10,000.

The National Direct Student Loan Program provides funds for long-term loans which bear no interest until a student has completed full-time study. Normally a person borrowing from these funds will repay the amount over a period of ten years. National Direct Student Loans are granted on the basis of financial need and available funds. All National Direct Student Loan commitments are made contingent on Congressional appropriation of funds annually for this program.

Contact Roger Keith, Director of Financial Aid, for further information on the National Direct Student Loan Program.

LOAN FUNDS

The Mary S. Rogers Scholarship and Loan Funds, established in 1926 for the benefit of students in the graduate school.

The Mary M. Thurber Fund, established by the late Dr. Charles L. Thurber, former president of the university Board of Trustees, as a memorial to his mother.

For loans from these and other sources that may become available, application should be made at the Graduate School Office.

DEPARTMENTAL FUNDS

The Wallace W. Atwood Research Fund. The income of this fund may be used at the discretion of the staff in the Graduate School of Geography for the promotion of field studies in geography by any member of the staff, or any one of the alumni holding a graduate degree from the Graduate School of Geography, or for the publication of results of such research work.

The Chester Bland Fund. The income of this fund is preferably used to provide aid to a promising student, either in residence or engaged in research elsewhere under the direction of the Department of History. It may also be used to defray the expense of visiting lecturers or of departmental research.

The Wallace W. Greenwood Fund. The income only is to be divided between the Departments of Physics and Chemistry and to be used for any purpose within the scope of these two departments.

The Morton L. "Sonny" Lavine Foundation is a memorial to Lieutenant Lavine of the United States Army, World War II. The income is to be used for the promotion of research in the Department of History.

The Libbey Fund, bequeathed to the university by Mary E. Libbey, is to establish a fellowship in physical geography and to aid the department in that field.

HOUSING AND BOARD

Off-campus rooms and apartments for both men and women are available in the immediate area of the university. For information concerning accommodations, contact directly the Office of Buildings and Grounds, which keeps a bulletin board of available off-campus rooms and apartments, or the department concerned. The Graduate School Office will also be glad to assist students in finding housing. Students should plan to arrive a few days before registration in order to arrange for housing because of the limited number of suitable off-campus apartments in the immediate area.

Graduate students are invited to take their board in the university dining halls under one of the food plans available. They will also find the Snack Bar available for single meals.

HEALTH SERVICE AND INSURANCE

A low-cost insurance plan covering ordinary medical expenses and limited maternity benefit for married students is available through the university. Unless a student is protected by similar insurance, he must enroll in this plan since all graduate students must be covered by Health and Accident Insurance. Students are not automatically covered by this insurance but must apply for it through the Graduate School Office where applications are available. Blue Cross-Blue Shield will be offered as an alternate Insurance Plan.

Graduate students are entitled to use of the University Health Service for minor first-aid needs.

Graduate Tuition and Other Charges

Tuition and insurance charges are payable when the semester bill is received. Identification cards are provided each year of residence. A late registration fee of $25.00 is charged if registration is not completed by the end of the first week of the semester. Candidates who are not in residence must pay the non-resident fee until the requirements for the degree are fulfilled; non-payment will automatically terminate candidacy.

SCHEDULE OF TUITION AND OTHER CHARGES

Tuition: Full program: $1,725.00 per semester. If less than a full program, the student will be charged according to the fraction of a program indicated by the chairman of the department on the registration card.

Tuition for Special Graduate Students $431.25 per course.

Insurance:	*Regular Coverage*
Single Students	$ 49.00
Married Student & Spouse	$118.00
Family Plan	$148.00
Health Service Fee	$ 12.50

Diploma Fee: (payable at the time the thesis or dissertation is deposited with the Registrar):

Students who do not write a thesis or dissertation, including those receiving the degree on the alternative program, must pay this fee no later than the date on which theses are due in the Registrar's Office.

Master's Degrees	$25.00
Doctor of Philosophy and Doctor of Education	$85.00

Non-Resident Candidate Fees: (payable on November 1 and March 1). If the thesis or dissertation is deposited with the Registrar before either date, no fee is charged for the semester.

The fees double upon renewal of candidacy.

Master's Candidates	$100.00 per semester
Doctoral Candidates	$100.00 per semester

(For the Master of Business Administration tuition and fees, write to *The Clark M.B.A. Program*, Department of Management, Clark University.)

(For the Master of Public Health tuition and fees, request a catalog from the College of Professional and Continuing Education, Clark University.)

REFUND

A student who officially withdraws in writing during the first two weeks of any semester is allowed a refund of 60 per cent on tuition; during the third week, 40 per cent; during the fourth week, 20 per cent; after the fourth week there is no refund. There is no refund on other charges, except board, when a student withdraws from the university.

The Summer School

SUMMER STUDY

Intensive instruction in numerous fields of study is offered in the summer program. A variety of courses is offered for undergraduates, graduate students and teachers. A student may register for up to a maximum of 3.0 units of credit each summer, by attending both sessions. Evening courses are also available during the summer to all students to continue their education while engaged in day-time employment.

DEGREES AND CREDIT

All courses offered in the Summer School are accepted at Clark for credit toward bachelor's degrees unless they are specifically limited in the description of the course. Many courses count toward the degrees of Master of Arts, Master of Arts in Education and Doctor of Philosophy. However, approval for such courses should be obtained in advance from the student's major department.

Graduate students formally registered in the Summer School may, with the approval of their major department, enroll in thesis courses under the direction of regular members of the staff.

SUMMER SCHOOL CATALOG

Detailed information concerning the Summer School is contained in a Summer School catalog which may be requested from the director of the Summer School.

The College of Professional and Continuing Education

The College of Professional and Continuing Education is the division of Clark University responsible for academic offerings taken by people enrolling in the university on a part-time basis in order to continue their education or upgrade their professional credentials. COPACE courses, conducted at times convenient to continuing education students, may be taken alone for personal enrichment or as part of a program leading to an undergraduate or graduate degree.

DEGREE PROGRAMS

Undergraduate programs are given leading to the following degrees:
Bachelor of Science in General Studies
Bachelor of Science in Business Administration
Bachelor of Fine Arts
For further information, write to Dean, COPACE, Clark University, for catalog on undergraduate programs.

Graduate programs are given leading to the following degrees:
Master of Business Administration, catalog available from Director, Master of Business Administration program.
Master of Public Service in Criminal Justice, catalo
available from Director, Master of Public Service in Criminal Justice.
Master of Public Service in Public Health, catalog available from Director, Master of Public Service in Public Health.

ADMISSION POLICY

Admission to COPACE courses and programs is open to Clark University students and to members of the Worcester community. Candidates applying for a degree program are required to submit records of their previous schooling.

Integrated Undergraduate-Graduate Programs

In the fall of 1973, Clark University inaugurated a new departure in higher education with the creation of a number of programs which bridge undergraduate and graduate education. Noting the changes in graduate education and projected manpower needs in the United States, the university established a new set of program options for advanced undergraduate students. Each program normally covers a three-year span, beginning in the junior year and leading directly to an M.A. degree.

The B.A. degree is awarded en route to the M.A. degree. The integration of undergraduate and graduate work usually accelerates student progress to an advanced degree. Each degree program has a strong career orientation, providing the student with the knowledge and skills to enter a profession directly or to continue on in a Ph.D. program elsewhere. Each program also emphasizes interdisciplinary education based upon a common core of course work and opportunity for individual professional interests. Formal application and admission to the program is required, and both Clark and transfer students are encouraged to apply. Transfer students interested in making application to the program should direct inquiries to the Admissions Office.

The university has approved programs of this type in comparative literature, environmental affairs and international development. The program in comparative literature centers on a problem-oriented approach to literature and theatre. Students will, in consultation with an advisory committee, formulate an individualized program of study which will stress interdisciplinary perspectives around a particular problem or theme. The program in environmental affairs trains professionals for carrying out a particular set of functions (technical, administrative, research, evaluative, planning and teaching) that relate to the understanding and management of environmental affairs. The program in international development trains planners, managers, organizers and educators in international development.

Eventually, other integrated undergraduate-graduate programs will be added until a network of such programs is available as a new set of options in the university college.

Interdepartmental program descriptions are included alphabetically with department and course listings.

Preprofessional Programs

While Clark does not offer majors in professional fields at the undergraduate level in the day college, there are a variety of offerings of interest to students who plan professional careers. The following sections briefly describe the courses and major offerings at Clark appropriate to preparation for careers in a number of areas.

CRIMINAL JUSTICE

Through its College of Professional and Continuing Education, Clark University offers a program leading to the attainment of a master's in Public Service. For undergraduate students interested in criminal justice as a discipline or as a career, the university offers over twenty courses that are relevant to the professional field. Examples from the list of relevant courses include: Government 164, Comparative Political Behavior; Urban Studies 222, Seminar: Public Policies and American Cities; History 223, Proseminar: American Legal History; Psychology 162, Psychoanalytic Interpretation of Behavior; Sociology 263, Deviance: Juvenile Delinquency. For further information or counselling on the feasibility of designing a program in criminal justice, write to Director, Criminal Justice Program, Clark University.

EDUCATION

For information about Clark's preprofessional program in Education, please see the departmental section.

LAW

Students interested in a prelaw program are advised to plan a broadly-based academic program which is liberal in character and which has adequate samplings drawn from the natural and physical sciences, social sciences and humanities. While there is no specific major or constellation of courses which are recommended for all prelaw students, it is important that the courses selected lead toward the development of certain skills, among which are: 1) *Communication and articulation skills:* courses in composition, creative writing, as well as courses in history, philosophy, government and other social sciences and humanities in which the ability to read and write well is stressed; 2) *Quantitative analysis and graphical presentation:* courses in mathematics,

computer science, and certain courses in economics and geography which help develop the ability to compile, understand and interpret data and to present and analyze it in graphical form;
3) *Logic:* the study of law requires the systematic analysis of propositions and of the conclusions that can be drawn from them. Thus, all courses which provide training in this skill, such as those in philosophy (logic), mathematics and some of the natural and social sciences are highly desirable;
4) *Critical understanding:* courses in ethics (philosophy), history, sociology and other social sciences which promote understanding of human institutions and values are recommended.

In general, the records of students applying to law schools will be evaluated according to several criteria, among which are: 1) the overall quality of grades, 2) the breadth and distribtuion of courses and 3) evidence of advanced learning and scholarship.

Students who are interested in prelaw are urged to consult with their faculty advisors, the members of the Prelaw Advisory Board and with the prelaw *Handbook* which is available in the Career Planning and Placement Office.

MANAGEMENT

For information about Clark's preprofessional program in management, please see the departmental section.

MEDICINE AND DENTISTRY

Students who are interested in premedical or predental programs major in any of the sciences, social sciences or humanities, but must complete — normally before the junior year — at least the minimum requirements for admission to medical and dental schools: one year of general chemistry; one year of general biology; one year of organic chemistry; one year of physics; one year of English. Calculus is also strongly recommended or required by many medical and dental schools. While there is considerable variation, some medical and dental schools encourage students to take courses in quantitative analysis, physical chemistry and advanced courses in biology. Proficiency in quantitative reasoning should be developed, and courses in mathematics, and in the sciences as well as many social-science courses are helpful toward that end. Although students are encouraged to take more than the minimum number of science courses required for admission to medical/dental schools, they are also urged to build breadth into their programs and to demonstrate their ability to handle successfully work in advanced courses. In selecting their courses and planning their programs, students are urged to consult with their faculty advisor, with members of the Premedical/Predental Advisory Committee and with the *Handbook* compiled by the committee. Copies of the *Handbook* and other materials pertaining to premedical, predental and other health-service education are available in the Career Planning and Placement Office.

Departments and Courses

Art

(See Department of Visual and Performing Arts.)

Astronomy

A single course is available at the introductory level. Advanced topics directly relating to astronomy are listed under Physics. Students interested in advanced work in Astronomy should consult with the instructor or the Physics Undergraduate Advisor.

1. EXPLORING THE UNIVERSE.
This course is explicitly designed for the non-science major who wishes to learn about the stars. It is also intended to provide for the interests of the student who seeks an acquaintance with the concepts and methods of science but who does not wish the detail found in the traditional introductory science survey course. Topics considered are interdisciplinary in character since astronomy involves physics, chemistry, biology and geology. The use of mathematics is minimized; only simple algebra is utilized. The first half of the course is devoted to consideration of the planets and the sun. In the

second half of the course, the stars, their life cycles and he galaxies are studied. Theories of the composition and origin of the solar system, of the universe and of life are explored. The heavens are best understood by having the student make direct observations of celestial objects. Emphasis is therefore placed on the making, analyzing and reporting of observations on the moon, sun, planets, meteors, stars, variable stars, nebulas and galaxies. Students make these observations using telescopes in the University Observatory as well as on several night field trips.

Full course, Modules 1-2. Dr. Andersen.

Biology

DEPARTMENT FACULTY

Rudolph F. Nunnemacher, Ph.D., Professor of Zoology, Department Chairman*
Vernon Ahmadjian, Ph.D., Professor of Botany**
John J. Brink, Ph.D., Professor of Biochemistry
Joseph C. Curtis, Ph.D., Professor of Zoology
John T. Reynolds, Ph.D., Professor of Microbiology
H. William Johansen, Ph.D., Associate Professor of Botany
Robert G. Sherman, Ph.D., Associate Professor of Physiology, Acting Chairman, Fall Semester 75-76
Samuel E. Johnson, Ph.D., Assistant Professor of Zoology
Timothy A. Lyerla, Ph.D., Assistant Professor of Developmental Genetics
Nicholas S. Thompson, Ph.D., Associate Professor of Psychology, Adjunct Associate Professor of Biology
Richard A. Howard, Ph.D., Assistant Professor of Geography, Adjunct Assistant Professor of Biology

Affiliated Staff
George Camougis, Ph.D., Professor of Physiology (Affiliate)
Frederic S. Fay, Ph.D., Associate Professor of Physiology (Affiliate)
Ian D. K. Halkerston, Ph.D., Professor of Endocrinology (Affiliate)
Warren Litsky, Ph.D., Professor of Microbiology (Affiliate)
Fernand G. Peron, Ph.D., Professor of Biochemistry (Affiliate)
Harris Rosenkrantz, Ph.D., Professor of Biochemistry (Affiliate)
Rodrique M. Sutherland, Ph.D., Research Associate

**on leave, Modules 1-2, 1975-76*
***on leave, Modules 3-4, 1975-76*

UNDERGRADUATE PROGRAM

Two majors are available. Type A is most suitable for those intending to apply for graduate studies in biology, medicine, dentistry, etc. This program is more prescribed and courses in the major must be taken for the letter grades. The Type B major allows the student to take a selection of courses in related fields of his own choosing but subject to departmental approval. It is particularly suitable for those with interests spanning several departments. Courses in related fields, as indicated below, may be taken on a Pass-No Record option for the Type B major only.

A Departmental Major Type A must take 8 courses in biology of which 6 must be in courses more advanced than the introductory course. However, only 2 of the 6 courses may be in directed research, directed readings or in a seminar course. The "introductory biology year course" will be prerequisite for all other courses in biology, but students must fulfill prescribed prerequisites for specific courses.

The Type A major must take, in related fields, a year of general chemistry, a year of introductory physics and at least one additional year course in chemistry, physics or geology including in each case the laboratory for a total of 6-semester or 3-year courses. Additionally, the Type A major must take a full year of calculus (Mathematics 12 or 15). None of the aforementioned courses may be taken on a "pass-no record" option.

A Type B major must take 8 courses (for letter grades) in biology of which 6 courses must be in courses more advanced than the introductory course. Only 2 of the 6 courses may be in directed research, directed readings or in a seminar course. In related fields the Type B major must take a year of general chemistry, including laboratory, and 4 additional courses chosen from Chemistry; Computer Science; English 214 (Darwinism); Geology; Mathematics; Philosophy 17 (Philosophy of Science); Physics; Psychology 222a, b (Physiology of Behavior); 224 (Human Behavior and Nervous System Functioning); 229b (Advanced Practicum in Physiological Psychology); Sociology 12a (Social Anthropology); or any other relevant courses approved by petition.

At least 10 courses of a major's program (Type A or B) must be taken from courses outside the field of biology, chemistry, geology, mathematics, physics and must not include any of the courses specified in the preceding paragraphs.

The department strongly advises all majors to select and consult with an advisor for obtaining the maximum benefits which the department has to offer.

HONORS PROGRAM

An Honors Program is available to especially well-qualified majors and requires the student to engage in an independent research project during the senior year together with meeting other departmental requirements, i.e., a broad distribution of courses, quality grades and an honors thesis and examination. Frequently, the Honors Project is the continuation of research during the summer.

GRADUATE PROGRAM

The department offers courses leading to Master of Arts and Doctor of Philosophy degrees in specialized phases of bacteriology, biochemistry, botany, cytology, embryology, genetics, marine biology, physiology and zoology. Admission to the graduate program assumes adequate preparation in the basic sciences, an overall undergraduate record of B or better and satisfactory standing in the Graduate Record Examination. Tuition scholarships and teaching assistantships are available. Detailed information can be obtained from the department chairman.

MASTER OF ARTS

The program usually requires three or four semesters of academic work and includes teaching experience and research culminating in an acceptable thesis.

DOCTOR OF PHILOSOPHY

The requirements are identical with those of the university and can be found in the catalog section on The Graduate School and includes teaching experience. The student's program is planned according to his needs with his program director.

PROGRAM IN BIOMEDICAL ENGINEERING

The Program in Biomedical Engineering is a graduate program under the joint sponsorship of Clark University and Worcester Polytechnic Institute. The aim of the program is to combine the resources of the two institutions to provide special education in this rapidly developing interdisciplinary area. Students entering the program must have a bachelor's degree in mathematics or one of the basic or engineering sciences. The master's program will include a minimum of five full courses taken at both institutions. All students will be expected to achieve some basic knowledge in biology, chemistry, engineering, mathematics and physics. Since a thesis on research is also required, the program will normally require at least two years of study. In general, the requirements for the degree will be consistent with the requirements for a master's or doctoral degree at both institutions. The detailed requirements for each student will be worked out by a Committee on Biomedical Engineering made up of faculty members from both institutions. Students enrolled at Clark will receive an M.A. or Ph.D. in Biology, the actual degree noting the cooperation of W.P.I. Conversely, students enrolled in the first instance at W.P.I. will receive the M.S. or Ph.D. in Biomedical Engineering, with the cooperation of Clark, indicated on the degree.

For further information, write to: The Director, Biomedical Engineering Program, Clark University, Worcester, Massachusetts 01610.

COURSES

101. PALEO-ZOOLOGY.

An interdepartmental course in geology and biology combining a systematic survey of the morphology, taxonomy and geologic history of groups of animals commonly found as fossils with their evolution to present day forms. Three lectures and one laboratory period per week including field trips.
Full course, Modules 3-4. Mr. Nunnemacher.

105. BIOLOGY AND MAN.

An introductory course intended for those who do not plan to major in biology. The course surveys the animal kingdom and emphasizes the relationships of various animals to man. Man is considered the example of an animal's solution to problems of metabolism, irritability and reproduction. As far as possible, man's relation to current biological problems of ecology, etc. will be discussed.
Full course, Modules 3-4. Mr. Nunnemacher.

106. BOTANY OF THE MAINE COAST.

A field course in basic botany and the identification of marine and fresh-water algae, fungi, lichens and flowering plants.
Full course, Module 5. Mr. Ahmadjian, Mr. Johansen.

107. MARINE ECOLOGY OF BERMUDA.

A ten-day field study at the Bermuda Biological Station.
Half course, Module 5. Mr. Nunnemacher.

108. INTRODUCTION TO BIOLOGY.

Biology 108 is a full year course (Modules 1 through 4) offered for those students who intend to major in Biology and/or take additional courses in the life sciences. The course is intended to prepare students who wish to broaden and deepen the concepts and skills acquired in secondary school for the more specialized advanced courses offered by the department. One half of the students enrolling in the course in September will be assigned to lecture/laboratory/discussion groups (108.1) taught by Mr. Reynolds over Modules 1 and 2. In January, those students will be assigned to a seminar course (selected from 108.6-.9) for Module 3 and a different one from the same cluster of four seminars for Module 4. The other half of the students enrolled in September will be assigned to a seminar (selected from 108.2-.5) for Module 1 and to a different seminar from the same cluster of four seminars for Module 2. This second group also will be assigned to lecture-laboratory/discussion groups (108.1) taught by Mr. Ahmadjian over Modules 3 and 4.

The program units for the coming year are as follows:

Modules 1 and 2

108.1

Lecture/laboratory/discussion groups - Reynolds (Offered over Modules 1 and 2, limited to 100 students in lectures and to 20 students in laboratory/discussion sections.

08.2-.5

Introductory Seminar in Biology (all four offered over Module 1 and repeated during Module 2, limited to 20 students in each class).

2 -

Nutritional Chemistry - Brink

3 -

Historical Development of Nucleic Acid Function - Curtis

4 -

Biology of Aquatic Plants - Johansen

5 -

Marine Biology - Johnson

odules 3 and 4

08.1

Lecture/laboratory/discussion groups - Ahmadjian (Offered over Modules 3 and 4, limited to 100 students in lectures and to 20 students in laboratory/discussion sections).

08.6-.9

Introductory Seminar in Biology (all four offered over Module 3 and repeated during Module 4, limited to 20 students in each class).

6 -

Human Genetics and Social Problems - Lyerla

7 -

Historical Perspectives in Biology - Nunnemacher

8 -

Cardiovascular Physiology - Sherman

9 -

The Evolution of Human Behavior - Thompson

1 full course and 2 half courses through the year. Staff.

109. MICROBIOLOGY.

A survey of the protists (with emphasis on the bacteria), their activities and the methods by which they are studied. Three lectures and three hours of laboratory work per week (limited to 40 students).
Full course, Modules 1-2. Mr. Reynolds.

110. BOTANY. *Not offered, 1975-76.*

A survey of the taxonomy, structure and physiology of plants. Three lectures and one laboratory period per week.
Full course. Mr. Johansen.

111. ZOOLOGY. *Not offered, 1975-76.*

A survey treating the evolution of the major animal phyla with emphasis on structural and functional adaptations, and principles of ecology. Three lectures and one laboratory period per week. (Alternates with Bio. 101).
Full course. Mr. Nunnemacher.

112. COMPARATIVE ANATOMY.

A comparative study of the morphology of the vertebrates with emphasis on the evolution of animals from fish to man. Prerequisite: 108. Two lectures and two laboratory periods per week.
Full course, Modules 3-4. Mr. Nunnemacher.

113. ALGAE AND FUNGI. *Not offered, 1975-76.*

Representative examples of the major groups of algae and fungi are studied with emphasis on their structure, interrelationships and adaptation to their environment. Prerequisite: a course in botany or consent of instructor. Two three-hour lecture-laboratory periods per week.
Full course. Mr. Johansen.

114. PHYCOLOGY. *Not offered, 1975-76.*

The structure, function and interrelationships of freshwater and marine algae will be studied with a view to understanding their role in the biosphere. Prerequisite: a course in botany or consent of the instructor. Three lectures and one laboratory period per week.
Full course. Mr. Johansen.

115. FLOWERING PLANTS.

An introduction to the classification, evolution, ecology and economic importance of flowering plants, with emphasis on the New England flora. Ferns, fern-allies and gymnosperms will also be included. Short field trips will be made to nearby areas for examination of the spring flora. A collection of plants will be encouraged but not required. One three-hour lecture-laboratory period per week.
Full course, Modules 3-4. Mr. Ahmadjian.

116. PLANTS AND MAN.

A course exploring the plants and plant products that have helped shape the development of man. Included will be cereal crops, forests and forest products, beneficial and harmful fungi, selective breeding of useful plants, historical aspects of agriculture, useful and destructive aquatic plants, noncereal food plants, drugs and medicinal plants, and future food supplies.
Full course, Modules 3-4. Mr. Johansen.

117. PRINCIPLES OF ECOLOGY.

A course in basic ecological theory governing organism-environment interrelationships. Population dynamics, energy flow, zoo-geography, community ecology, as well as ecological methods and environmental problems will be included. Three lectures per week.
Full course, Modules 1-2. Mr. Johnson.

118. GENETICS.

Principles and problems of genetics.
Full course, Modules 1-2. Mr. Lyerla.

119. EXPERIMENTAL GENETICS.

Concurrent with 118. One laboratory period per week.
Full course, Modules 1-2. Mr. Lyerla.

120. HISTOLOGY.

The microscopic anatomy of tissues and organs of mammals. Prerequisite: 112. Two lectures and two laboratory periods per week.
Full course, Modules 3-4. Mr. Nunnemacher.

121. MICROTECHNIQUE.

A laboratory course in the preparation of histological sections. Three afternoons a week or the equivalent.
Full course, Modules 3-4. Mr. Nunnemacher.

137. CELLULAR BIOLOGY.

The cell as a structural and functional unit. Introduction to the physiochemical properties and metabolic roles of molecules and macromolecules of cellular origin. Discussion of the roles of the nucleus and cytoplasm in the regulation of cellular processes. Three lectures per week. Prerequisite: Biology 108 or consent of instructor.
Full course, Modules 3-4. Mr. Curtis.

170. HUMAN NUTRITION.

The basic components of food will be considered with respect to their biological function of maintaining human growth and vitality. The role of food additives and cultural variations in diet will be discussed. For non-science majors.
Full course, Module 5. Mr. Brink.

182. PRIMATE SOCIAL BEHAVIOR AND HUMAN EVOLUTION. *Not offered, 1975-76.*

The study of the social behavior of monkeys and apes highlights central problems in psychological, zoological and anthropological approaches to behavior. It also has important implications for the past evolution and present nature of man's sociality (see Psychology 256).
Full course, Modules 1-2. Mr. Thompson.

183. PRINCIPLES OF BEHAVIORAL EVOLUTION.

From a broad survey of the social systems of animals, this course will attempt to distill the general principles that have directed the evolution of animal behavior. (See Psychology 246.)
Full course, Modules 3-4. Mr. Thompson.

212. SEMINAR IN PLANT ECOLOGY.

Interactions between plants and their physical and biological environments. Prerequisite: 110 or 117 or consent of instructor.
Full course, Modules 3-4. Mr. Johansen.

213. PLANT PHYSIOLOGY.

An introduction to the function and chemistry of plants. Three lectures, one laboratory period per week. Prerequisite: one course in botany and one in chemistry.
Full course. Mr. Brink, Mr. Johansen.

214. SEMINAR IN PHYCOLOGY. *Not offered, 1975-76.*

Selected topics dealing with algae from the structural, physiological or ecological points of view. Prerequisite: 110 and 113 or consent of instructor.
Full course, Modules 3-4. Mr. Johansen.

215. INVERTEBRATE ZOOLOGY. *Not offered, 1975-76.*

A detailed survey on the diversity of invertebrates. Anatomical and histological examination of selected types, concepts of evolution and speciation. Prerequisite two semesters of biology or consent of instructor. Two lectures and two laboratory periods per week.
Full course. Mr. Johnson.

216. FIELD ECOLOGY.

An introduction to ecological methods involving studies of both aquatic and terrestrial habitats. Prerequisite: Biology 117 or permission. Two lectures and two laboratories per week.
Full course, Modules 1-2. Mr. Johnson.

217. MARINE BIOLOGY.

An introduction to the marine ecosystem in relation to physical, chemical, geological and biological factors. Two lectures per week. Prerequisite: Biology 117 and consent of instructor.
Full course, Modules 3-4. Mr. Johnson.

219. LABORATORY IN ETHOLOGY.

An introduction to observational techniques and the study of human and animal subjects. Consent of the instructor.
Full course, Module 5. Mr. Thompson.

221. EMBRYOLOGY.

Consideration of the fundamentals of vertebrate embryology. Three lectures and one laboratory period per week. Prerequisite: Biology 112 or consent of instructor.
Full course, Modules 3-4. Mr. Lyerla.

224. NEUROANATOMY. *Not offered, 1975-76.*

The structural and functional organization of the central nervous system of man. Prerequisite: Biology 112 or consent of instructor. Three lectures per week.
Full course, Modules 3-4. Mr. Nunnemacher.

225. ELECTRON MICROSCOPY.

Introduction to the principles of electron optics, use of the electron microscope, preparation of specimens and the techniques of electron microscopy applicable to biological investigations. Two lectures and two laboratory periods per week. Prerequisite: permission of the instructor.
Full course, Modules 1-2. Mr. Curtis.

228.1. DEVELOPMENTAL GENETICS.

A survey of modern concepts concerning genetic control of differentiation and development. Discussions emphasize primarily metabolic controls of differential protein synthesis leading to novel cellular phenotypes in organisms from bacteriophage to man. Prerequisite: 118 or consent of instructor.
Half course, Module 3. Mr. Lyerla.

228.2. SEMINAR IN DEVELOPMENTAL GENETICS.

Prerequisite: Biology 228.1.
Half course, Module 4. Mr. Lyerla.

230. BIOLOGY: THE STATE OF THE ART.

A seminar for seniors and beginning graduate students who are interested in assessing the progress that has been made in approaching the outstanding questions in the biological sciences. Permission of instructor required. Two 75-minute meetings per week.
Full course, Modules 1-2. Mr. Reynolds.

232. SELECTED TOPICS IN BACTERIOLOGY.

A seminar for advanced undergraduates and beginning graduate students. Prerequisite: Biology 108 and consent of instructor. Two 75-minute meetings per week. Special Problems (260) may be taken concurrently for additional variable credit.
Full course, Modules 3-4. Mr. Reynolds.

235. SEMINAR IN CELLULAR BIOLOGY.

Prerequisite: Biology 137 or consent of instructor.
Full course, Modules 1-2. Mr. Curtis.

239. BIOLOGICAL SYSTEMS AND WATER POLLUTION CONTROL.

An attempt to deal with those problems associated with water pollution that are amenable to solution through the application of concepts and approaches of the biological sciences. The participants do not have to be biology majors, but will be expected to be literate in one or more of the scientific disciplines. Permission of instructor required. Two 75-minute meetings per week. Bio. 260 - Special Problems - may be taken concurrently for additional variable credit.
Full course, Modules 3-4. Mr. Reynolds.

240. GENERAL ANIMAL PHYSIOLOGY.

Introduction to the principles underlying physiological functions common to living organisms. The course covers the subcellular, cellular and organ levels of organization and places a primary emphasis on mammals. Prerequisites: Introduction to Biology and Introductory Chemistry. Three lectures and one laboratory per week.
Full course, Modules 1-2. Mr. Sherman.

242. COMPARATIVE ANIMAL PHYSIOLOGY.

Not offered, 1975-76.

Full course. Mr. Sherman.

247. SEMINAR IN NEUROPHYSIOLOGY.

A seminar on the principles of transmission, integration and storage of information in neuronal pathways and other considerations of the nervous system. Prerequisite: a course in neurophysiology or its equivalent or consent of the instructor.
Full course, Modules 1-2. Mr. Sherman.

249. PRINCIPLES OF NEUROPHYSIOLOGY.

Physiology of central and peripheral nervous systems, receptors and muscles, considered in both vertebrates and invertebrates. Three lectures and one laboratory period per week. Prerequisite: Biology 240 or consent of the instructor.
Full course, Modules 3-4. Mr. Sherman.

250. PRINCIPLES OF APPLIED IMMUNOLOGY.

Not offered, 1975-76.

An introduction to the basic principles, problems and theories concerning the immunological behavior of man and the animal kingdom, familiarizing the student with the experimental evidence upon which are based the present concepts of immune mechanisms. The course is oriented to demonstrate the basic methods of experimental immunology and the application of such methods to biological problems.
Full course. Dr. Rosenkrantz.

260. DIRECTED RESEARCH.

Advanced semi-independent study of an approved topic under the direction of a departmental member. Consent of instructor required. Required for honors in biology.
Variable credit.
Modules 1-2-3-4-5. Staff.

261. DIRECTED READINGS.

Advanced readings on an approved topic under the direction of a departmental member. Consent of the instructor required.
Variable credit.
Modules 1-2-3-4-5. Staff.

268. PRINCIPLES OF PHARMACOLOGY.

Not offered, 1975-76.

This course is intended to acquaint the student or research worker with established principles and the more important phenomena involved in the study of pharmacology. Particular emphasis is placed on the quantitative aspects of the interaction of chemical compounds or drugs with biological systems. The principal pharmacological actions of several important drugs are illustrated.
Full course. Staff.

270. BIOCHEMISTRY.

The principles of mechanisms of biochemical reactions in an understanding of the metabolism of foodstuffs and the role of enzymes, nucleic acids and hormones. An acquaintance with the instrumentation in biochemical research will be presented. Prerequisite: Chemistry 130. Three lectures, one laboratory per week, through the year.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Brink.

271. BIOCHEMISTRY OF NUCLEIC ACIDS.
Not offered, 1975-76.

The chemical and physical properties of RNA and DNA derived from various sources will be considered with respect to their isolation, separation and characteristics. The functional role and biological significance of the nucleic acids in subcellular organelles will be examined. Prerequisite: Biology 270 or consent of instructor.
Full course, Modules 3-4. Mr. Brink.

273. NEUROCHEMISTRY.

The metabolic aspects of brain amines and biopolymers will be considered in relation to neural function. Effects of drugs on memory processes will be discussed in terms of biochemical mechanisms. Prerequisite: Biochemistry 270 or consent of instructor.
Full course, Modules 3-4. Mr. Brink.

280. THE HISTORY AND PRESENT STATUS OF INSTINCT.
Not offered, 1975-76.

It has long been argued and long contested that man and animal alike are guided in their social behavior by innate tendencies. This offering will emphasize the devious and irrational course of progress in a scientific field of study so loaded with social and philosophic implications. Permission of instructor required. (See Psychology 260.)
Full course. Mr. Thompson.

291. QUANTITATIVE METHODS FOR BIOLOGY.
Not offered, 1975-76.

Elements of statistical methods will be stressed. These will include hypothesis testing, design and sampling. Also a brief introduction to computer programming and model-building techniques will be included.
Full course. Mr. Howard.

295. FOREST RESOURCE MANAGEMENT.

Refer to description under Geography 241.
Half course, Module 1. Mr. Howard.

300. READINGS AND RESEARCH IN BIOLOGY.

Variable credit.
Modules 1-2-3-4-5. Staff.

310. SCIENTIFIC WRITING FOR GRADUATE STUDENTS.

An introduction to the techniques of writing scientific papers. The principal assignment will be the writing of a journal article and a detailed analysis of the steps involved. Related areas which will be covered include searching the scientific literature, handling of quantitative data relevant to biological systems and oral presentation of a scientific paper. Prerequisite: permission of the instructor.
Full course, Modules 1-2. Mr. Ahmadjian.

317. MICROCLIMATOLOGY AND BIOMETEOROLOGY.

An introduction to the quantitative analysis of organism-environment interactions.
Full course, Modules 3-4. Mr. Johnson.

325. SEMINAR IN ULTRASTRUCTURE.

Discussion of the structure of macromolecules and subcellular organelles in relation to their biological functions. Evidence obtained by a variety of physical and chemical methods will be considered, particular emphasi being placed on electron microscopic studies. Consent o instructor required.
Full course, Modules 3-4. Mr. Curtis.

332. SEMINAR IN BACTERIOLOGY.
Not offered, 1975-76.

Selected topics in bacterial ecology and physiology. Consent of instructor required.
Full course. Mr. Reynolds.

334. SEMINAR IN BEHAVIOR AND EVOLUTION.

A consideration of contemporary issues in the phylogeny and ontogeny of behavior in general and social behavior in particular. (See Psychology 334.)
Full course, Modules 3-4. Mr. Thompson.

335. SEMINAR IN ENVIRONMENTAL SYSTEMS.
Not offered, 1975-76.

Systems analysis and models related to environmental management. Programming experience required.
Full course, Modules 3-4. Mr. Howard.

341. SEMINAR IN ENDOCRINOLOGY.

Half course, Modules 1-2. Mr. Curtis.

342. RESEARCH IN ENDOCRINOLOGY.

Half course, Module 2. Mr. Curtis.

346. SYNAPTIC TRANSMISSION.

The electrophysiology, ultrastructure and pharmacology of chemical and electrical synapses. Current information and theories of synaptic transmission as well as the role of synapses in neural integration will be examined.
Half course, Module 1. Mr. Sherman.

347. CENTRAL NERVOUS SYSTEM.

The functional organization and physiology of selected neural networks in the central nervous system of certain vertebrate and invertebrate animals. Neuronal systems will include the cerebellum, cerebral cortex and spinal cord of mammals and the central ganglia of molluscs and arthropods. In these discussions, the role of command fibers and central oscillators in initiating stereotyped behaviors and biological rhythms in lower animals will be examined.
Half course, Module 2. Mr. Sherman.

350. GRADUATE SEMINAR.

Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

360. MASTER'S THESIS.

Variable credit.
Modules 1-2-3-4-5. Staff.

390. DOCTORAL DISSERTATION.

Variable credit.
Modules 1-2-3-4-5. Staff.

Chemistry

DEPARTMENT FACULTY

Harry C. Allen, Jr., Ph.D., Professor of Chemistry, Department Chairman
Edward N. Trachtenberg, Ph.D., Professor of Chemistry
Wen-Yang Wen, Ph.D., Professor of Chemistry
Daeg S. Brenner, Ph.D., Associate Professor of Chemistry
Karen L. Erickson, Ph.D., Associate Professor of Chemistry
Jack L. Pinkus, Ph.D., Visiting Associate Professor of Chemistry
Alan A. Jones, Ph.D., Assistant Professor of Chemistry
Donald J. Nelson, Ph.D., Assistant Professor of Chemistry

Affiliated Staff

Marcel Gut, Ph.D., Professor of Chemistry (Affiliate)
Elias Meymaris, Ph.D., Assistant Professor of Chemistry (Affiliate)

UNDERGRADUATE PROGRAM

The requirements for the chemistry major are two courses in mathematics beyond Mathematics 11, two courses in physics (Physics 12 and 19) and eight courses in chemistry and related fields beyond Chemistry 12, 100b or 102b. These must include:

Course	*Number*	*Course Credit*
Organic Chemistry	130 or 132	2
Inorganic Chemistry	150	1
Physical Chemistry I	160	1
Physical Chemistry II or	162	
Biophysical Chemistry	164	1
Analytical Chemistry or	170	
Environmental Chemistry	172	1
		Total 6

The remaining two-course requirement may be met either by advanced chemistry courses or, with the permission of the Chemistry Department, by appropriate courses in mathematics, physics and biology.

Students wishing to be accredited by the American Chemical Society should consult the department chairman with regard to specific course requirements.

Students planning graduate study in chemistry are urged to take Chemistry 135, 200, 230 and/or advanced mathematics, physics and biochemistry courses, depending on the area of interest. A reading knowledge of German, French or Russian is also recommended. All chemistry majors are encouraged to undertake independent research projects either as a candidate for honors (Chemistry 215) or in a special projects course (Chemistry 214) and may do so after completing Chemistry 160.

A student may elect as his/her first course in Chemistry — Chemistry 10, 12, 100, 102, 130 or 132. The decision to start with Chemistry 12, 130 or 132 (all accelerating options) must be made in consultation with the department and may require taking a placement examination offered at the beginning of the academic year.

GRADUATE PROGRAM

The department offers programs leading to the degrees of Master of Arts and Doctor of Philosophy with specialization in various fields of chemistry and in chemical physics. Emphasis is placed on tailoring programs to fit the specific needs and desires of the graduate student. To facilitate this goal, a committee of interested faculty works with each student to advise and review his/her progress in research work and together with the student defines the formal course work requirements. In the case of master's degree candidates, the requirements are essentially those of the university as stated elsewhere in the catalog. Up to one year's equivalent of teaching apprenticeship will be required of all candidates for advanced degrees.

In addition to formal course work, the student must pass qualifying and preliminary examinations, and the department language requirement must be met. For further details, the appropriate departmental publications should be consulted.

Graduate scholarships, teaching assistantships and research fellowships are available. Further information on these awards may be obtained from the department chairman.

COURSES

10. CHEMISTRY FOR NON-SCIENCE MAJORS.

This one semester, relatively non-mathematical course on the fundamentals of chemistry is intended to develop a qualitative feeling about chemistry and its role in the modern world. Although not designed for science majors, students who do develop a deeper interest in chemistry can, without loss of time, enter Chemistry 12 or Chemistry 132 (with the extra recitation). Three lectures and one 3-hour laboratory per week.
Full course, Modules 1-2. Mr. Brenner.

12. FUNDAMENTALS OF CHEMISTRY.

This mathematical course on the major principles of chemistry, which is at the same level of sophistication as Chemistry 100 or 102, is designed to accelerate students whose high school background in chemistry and

mathematics is sufficiently good so that they do not require a full year of General Chemistry in order to qualify for Organic Chemistry. Three lectures and one 4-hour laboratory per week.
Full course, Modules 1-2. Mr. Brenner.

100. INTRODUCTORY CHEMISTRY.

This systematic study of the elements and their principal compounds and of the fundamental laws and theories of chemistry is designed as an introduction to the field of chemistry. A knowledge of high school algebra is necessary; high school chemistry and physics, though helpful, are not required. This course is designed to meet the needs of chemistry majors, students interested in biology, physics, medicine and dentistry as well as those seeking a knowledge of chemistry as part of their liberal arts education. Three lectures, one recitation and one 4-hour laboratory per week. Two lecture sections with enrollment in each limited to 65.
Full course, Modules 1-2. Mr. Nelson.
Full course, Modules 3-4. Mr. Trachtenberg.

102. INTRODUCTORY CHEMISTRY.

This course is identical to Chemistry 100 except that it will meet for three lectures, one recitation and one 4-hour laboratory per week during Modules 3-4 and for six lectures, two recitations and two 4-hour laboratories per week during Module 5. Enrollment limited to 65.
Full course, Modules 3-4.
Full course, Module 5. Mr. Brenner.

130. ORGANIC CHEMISTRY.

The lectures emphasize the synthesis and reactions of organic compounds, structure determination and reaction mechanisms. The laboratory concentrates on the preparation and physical, spectral and chemical properties of important classes of organic compounds. Prerequisite: Chemistry 12 or 100 or 102 or advanced placement. Three lectures and one 4-hour laboratory per week.
Full course, Modules 1-2. Mr. Pinkus.
Full course, Modules 3-4. Ms. Erickson.

132. ORGANIC CHEMISTRY.

This course is identical to Chemistry 130 except that it is also open to students who either almost qualify for advanced placement on the basis of examination or who have completed Chemistry 10. Students in these categories must attend an additional recitation each week during which topics in general chemistry will be reviewed; other students may also attend these recitations if they wish. Three lectures and one 4-hour laboratory per week during Modules 3-4 and six lectures and two 4-hour laboratories per week during Module 5.
Full course, Modules 3-4.
Full course, Module 5. Mr. Trachtenberg.

135. QUALITATIVE ORGANIC ANALYSIS.

This laboratory study of the identification of organic compounds utilizes both classical and modern instrumental techniques. Prerequisite: Chemistry 130 or 132 or consent of the instructor. One hour conference and seven hours of laboratory per week.
Full course, Modules 1-2. Mr. Pinkus.

140. ANALYTICAL CHEMISTRY.

This course covers both the theoretical principles and technical methods employed in determining the qualitative and quantitative composition of matter. Laboratory options are offered for those students whose primary interest is in molecules of a clinical or biological nature as well as for those students whose primary interest is in more classical chemistry itself. Pre- or corequisite: Chemistry 162.
Full course, Modules 3-4. Mr. Jones.

142. ENVIRONMENTAL CHEMISTRY.

This study focuses on the chemistry related to environmental problems such as air and water pollution from fossil fuels, pesticides, metals, food additives and solid wastes. The laboratory primarily will make use of analytical techniques. Prerequisites: Chemistry 100. Two lectures and one laboratory per week.
Full course, Modules 1-2. Mr. Jones.

150. INORGANIC CHEMISTRY.

Included in this descriptive chemistry course of the elements are such topics as acid-base theory and ligand field theory. Prerequisite: Chemistry 12, 100 or 102 or equivalent. Two lectures and one 4-hour laboratory per week.
Full course, Modules 3-4. Mr. Allen.

160. PHYSICAL CHEMISTRY I.

The lectures cover principles of physical chemistry applied to gases, liquids and solids; chemical thermodynamics; solution chemistry. The laboratory includes experiments in physical chemistry techniques of measurement and technical report writing. Prerequisite: Mathematics 12 and either Chemistry 12, 100 or 102. Chemistry 130 or 132 is suggested as a pre- or corequisite. Pre-or corequisite: Physics 12 or a strong high school background in physics and enrollment in the recitation part of this course. Three lectures, one 4-hour laboratory and one optional recitation per week.
Full course, Modules 1-2. Mr. Wen.

162. PHYSICAL CHEMISTRY II.

The topics covered in this continued discussion of the principles of physical chemistry are electrode processes, chemical kinetics and atomic and molecular spectroscopy. Prerequisite: Chemistry 160. Three lectures and one 4-hour laboratory per week.
Full course, Modules 3-4. Mr. Wen.

164. BIOPHYSICAL CHEMISTRY.

This rigorous course in physical chemistry, offered as an alternative to Chemistry 162, emphasizes the physical

chemistry of biological systems: enzyme kinetics, spectroscopy of biological systems, macromolecules, transport processes, x-ray diffraction. Prerequisite: Chemistry 160. Three lectures and one 4-hour laboratory per week.
Full course, Modules 3-4. Mr. Wen.

200. PHYSICAL CHEMISTRY III.

This is essentially an introduction to quantum mechanics and covers elementary quantum-mechanical treatment of the structure of atoms and molecules. Three lectures and one discussion per week. Prerequisites: Chemistry 160 and 162 or 164.
Full course, Modules 1-2. Mr. Allen.

210. PHYSICAL CHEMISTRY IV.

The course deals with the application of group theory to problems of chemical interest such as molecular vibrations, hybrid orbitals and molecular orbital theory. Three lectures and one discussion per week. Prerequisite: Chemistry 200 or equivalent.
Full course, Modules 3-4. Mr. Allen.

214. SPECIAL PROJECTS.

Individual investigations involve laboratory and/or literature research.
Variable credit.
Modules 1-2-3-4-5. Staff.

215. HONORS COURSE.

The honors course, primarily for majors seeking departmental honors in chemistry, involves a laboratory research project and participation in departmental seminars.
Variable credit.
Modules 1-2-3-4-5. Staff.

230. PHYSICAL ORGANIC CHEMISTRY.

This is a lecture course on the fundamentals of organic chemistry including molecular structure, acidity and basicity, kinetics and mechanisms with emphasis on the most recent advances in organic chemical theory. Prerequisites: Chemistry 130 or 132, 160 or consent of the instructor.
Full course, Modules 1-2. Mr. Trachtenberg.

242. NUCLEAR SCIENCE.

This course covers the fundamentals of nuclear chemistry and physics: production, isolation, identification and measurement of radioactive atoms. Three lectures and three laboratory hours per week. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Brenner.

280. INSTRUMENTAL METHODS.

This laboratory course covers the principles and application of modern instrumental techniques to the separation and analysis of mixtures and for the characterization of pure compounds. Two lectures and six laboratory hours per week. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Jones, Mr. Brenner.

300. RESEARCH.

Variable credit.
Modules 1-2-3-4-5. Staff.

312. INORGANIC CHEMISTRY. *Not offered, 1975-76.*

This is an advanced treatment of theoretical and descriptive inorganic chemistry. Prerequisite: consent of the instructor.
Full course. Mr. Allen.

322. THERMODYNAMICS. *Not offered, 1975-76.*

This lecture course discusses applications of classical thermodynamics to chemical systems.
Full course. Mr. Trachtenberg.

323. STATISTICAL MECHANICS.

This lecture course treats statistical mechanics as a bridge between molecular properties and thermodynamic functions; with applications to chemical systems. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Wen.

333. SYNTHETIC ORGANIC CHEMISTRY.

These lectures on synthesis of organic molecules emphasize scope and limitations of general methods, mechanism and stereochemistry, synthesis of carbon to carbon bonds, oxidation and reduction. Prerequisite: Chemistry 230, or consent of the instructor. Offered in alternate years.
Full course, Modules 3-4. Ms. Erickson.

335. NATURAL PRODUCTS. *Not offered, 1975-76.*

The chemistry of selected naturally occurring compounds. Includes structure determination, synthesis, mechanistic interpretation of exotic transformations and biogenetic theory. Prerequisite: consent of the instructor. Offered in alternate years.
Full course. Ms. Erickson.

340. QUANTUM CHEMISTRY.

This course in elementary quantum mechanics covers simple systems, properties of wave functions and approximation methods for complex systems.
Full course. Mr. Allen.

341. ADVANCED QUANTUM CHEMISTRY.

This is a more sophisticated continuation of quantum chemistry: approximation methods, atomic states, spectroscopy and molecular methods. Prerequisite: Chemistry 340 or consent of the instructor.
Full course. Mr. Allen.

344. SELECTED TOPICS IN ADVANCED NUCLEAR CHEMISTRY.

This is a discussion of the current experimental and theoretical literature in nuclear reactions, fission and nuclear spectroscopy. Prerequisite: Chemistry 242 or its equivalent.
Full course. Mr. Brenner.

350. SEMINAR.

This seminar consists of reports on research work and discussions of recently published work.
No credit. Guest Lecturers, Staff and Graduate Students.

360. COORDINATION COMPOUNDS.

This advanced course in inorganic chemistry treats chemical and physical properties of complexes: theories of coordination, stereoisomerism, reaction mechanisms and solution stabilities. Offered in alternate years.
Full course, Modules 1-2. Mr. Allen.

361. MOLECULAR STRUCTURE.

This is a lecture course on physical methods relevant to the determination of the structure of molecules (x-ray, electron diffraction, magnetic resonance, electronic properties, etc.). Prerequisite: consent of the instructor. Offered in alternate years.
Full course, Modules 3-4. Mr. Jones.

369. ELECTRONIC SPECTROSCOPY.
Not offered, 1975-76.

This is an introduction to the study of ultraviolet and visible absorption spectra as well as well as emission spectra. Prerequisite: consent of the instructor. Offered in alternate years.
Full course. Mr. Wen.

379. SPECIAL TOPICS.

This seminar course consists of research and literature; reports by graduate students.
Full course. Staff.

380. RESEARCH CONFERENCE.

This conference consists of informal reports of research work being done in the laboratory.
No credit. Staff and Graduate Students.

Classics

(See Department of Foreign Languages and Literatures.)

Comparative Literature

PARTICIPATING FACULTY

Raymond E. Barbera, Ph.D., Program Director, Professor of Romance Languages
J. Richard Reid, Ph.D., Professor of Romance Languages
Marvin A. D'Lugo, Ph.D., Associate Professor of Spanish
Kenneth Hughes, Ph.D., Associate Professor of German
Hartmut Kaiser, Ph.D., Associate Professor of German
J. Fannin King, M.A., Associate Professor of Romance Languages
Walter Schatzberg, Ph.D., Associate Professor of German and Chairman, Department of Foreign Languages and Literatures
Michael K. Spingler, Ph.D., Associate Professor of French
Dorothy K. McCall, Ph.D., Assistant Professor of French
Lori R. Toepel, Ph.D., Visiting Assistant Professor in Classics
Irene Kriskijans, M.A., Assistant Professor of Russian (Affiliate)

PROGRAM

The three-year BA/MA Program in Comparative Literature is available to students who have completed the sophomore year, who have a good background in at least one foreign language (French, German, Spanish) and who have a demonstrated interest in literature and literary criticism.

In order to achieve the general objective of the program, *the highly literate student of literary criticism* and to permit a common ground for discussions in the Colloquium on Literary Problems, the following sequencing of required core courses is suggested when possible. Exceptions will be made where special situations prevent this sequencing.

1. Critical Approaches	(1 unit)
2. Elements of Narrative	(1 unit)
3. Problems in Drama	(1 unit)
4. Seminar in Literary Theory and Practice	(2 units)

Reading lists will be made available to all students upon their acceptance into the program. These lists will assure that students are exposed to the same sources and methodologies and make available a common vocabulary to enable participation in the discussions that form a regular and indispensable part of the process of critical awareness and investigation. The four core courses are integrated and designed to offer to students an exposure to critical ideas that will enable them to meet on common ground to actively consider the validity of ideas and methods. The three-year program beginning with the junior year is, in effect, an investigation of the nature of criticism as it applies to literary works. Fluency in that area, therefore, is the goal.

THE COLLOQUIUM ON LITERARY PROBLEMS

An indispensable part of the program is the Colloquium. It is in effect a forum where students and faculty meet one evening every two weeks to discuss problems ranging from modifications and evaluation of the program itself to discussion of critical problems in literary works. The Colloquium allows the students the opportunity to express their ideas and to test them in the presence of their peers. It is designed to allow a free discussion of ideas which, however, involves careful preparation. First-year students who have yet to take the core courses will find themselves among students who have completed their first and second years and also among those who are writing their dissertations. As a consequence, the Colloquium, besides soliciting discussion, serves as a learning-teaching experience with students progressing from the learning to that of the teaching experience.

The Colloquium owes its existence to the concept that literary problems are themselves difficult entities in that they are not self-evident, but rather are to be actively pursued and formulated. It may even be said that properly formulated, they adumbrate their resolutions. It is within the Colloquium that large scope is offered to students and faculty to express their ideas concerning possible literary problems, their genesis, their formulation and a possible resolution, tentative, perhaps, but promising.

REQUIRED COURSES IN ADDITION TO CORE COURSES

It is basic to the philosophy of the program that each candidate become fluent in at least one foreign language. To this end, each candidate is to take six courses either in a foreign literature (German, French, Spanish) in the original language or, where students have a command of more than one foreign language, in a combination of the two if desired. Such expertise would preclude the parochialism of a monolinguist. It would indeed be an anomaly that a comparatist should function on the basis of his native language alone. Students with a good language background are encouraged to learn more than one foreign language. A number of students presently enrolled in the program find themselves in this category.

TEACHING INTERNSHIP

A teaching internship will be available for qualified students in the final year. Interns will serve as instructors and discussion leaders in foreign language, foreign literature and comparative literature courses and will be involved in the course in its entirety. The internship may also involve participating in the direction and production of a foreign language play.

THE M.A. THESIS

The thesis will be a normal outcome of a series of literary problems cooperatively explored by students and faculty. It will in effect be the fruit of the student's work with faculty advisors and, therefore, the advisory system is essential to it. The process of problem-solving explored throughout the program by the student and faculty advisors will lead naturally into the M.A. thesis, thus eliminating the danger of an abrupt change from a random selection of courses to a sudden search for a thesis topic. The student's advisors will work closely with him during the course of the program in order to assist in the preparation of the thesis.

FINANCIAL AID

Some partial and full tuition remission scholarships will be available in the final year of the program. Several teaching assistantships will also be available to students involved in the teaching internship in their final year. All awards will be based upon merit and need.

COURSES

For course listings and descriptions refer to Comparative Literature under the Department of Foreign Languages and Literatures.

Computer Science

The courses in the area of Computer Science listed below are available to Clark students. They involve the use of the Xerox 530 Computer System located on campus. Other computer science courses are available through the Worcester Consortium.

101. INTRODUCTION TO COMPUTER PROGRAMMING.

An introductory programming course designed for students with no mathematics beyond high school algebra. The fundamentals of the FORTRAN IV programming language are introduced. Students develop a working knowledge and understanding of number representation and arithmetic, arrays and indexing, character representation and manipulation, subprogram definition and parameter passing, loaders and assemblers, various algorithms, and an overview of third generation computers.
Full course, Modules 1-2. Mr. Larson.

102. COMPUTER APPLICATIONS.

The topics of storage and retrieval, file design, simulation, queuing, sorting and computer graphics are covered. Several projects requiring programming skills are

assigned. Prerequisite: Computer Science 101 or consent of instructor.
Full course, Modules 3-4. Staff.

103. INTRODUCTION TO COBOL PROGRAMMING.

The concepts of Cobol, today's most widely used programming language for business applications, are introduced. The student is expected to complete a number of programming assignments during the course. Prerequisite: Computer Science 101 or consent of the instructor.
Full course, Modules 3-4. Mr. Larson.

140. ASSEMBLER LANGUAGE PROGRAMMING.

This course is designed to enable the student to write substantive programs in assembler language for the Xerox 530. While a knowledge of a higher level language is not necessary, some familiarity with computer operations would be helpful. Otherwise, permission of the instructor is required.
Full course, Modules 1-2. Staff.

201. ADVANCED COMPUTER PROGRAMMING.

This course is designed for students with previous programming experience. Each student is expected to select and carry to completion a project requiring substantive computer analysis in machine language, assembler or any higher level language.
Variable credit.
Modules 1-2, 3-4. Staff.

Mathematics 118. FORTRAN FOR SCIENCE STUDENTS.

Refer to course description under Mathematics.
Mr. Stubbe.

Mathematics 119. ELEMENTARY NUMERICAL ANALYSIS.

Refer to course description under Mathematics.
Mr. Stubbe.

Mathematics 120. LINEAR PROGRAMMING.

Not offered, 1975-76.

Refer to course description under Mathematics.

Geography 212. COMPUTER PROGRAMMING.

Refer to course description under Geography.
Mr. Howard.

Economics

DEPARTMENT FACULTY

Roger C. Van Tassel, Ph.D., Professor of Economics, Department Chairman
James A. Maxwell, Ph.D., L.H.D., Professor of Economics, Emeritus
Howard W. Nicholson, Ph.D., Professor of Economics
Attiat F. Ott, Ph.D., Professor of Economics
George E. Hargest, M.B.A., Associate Professor of Economics, Emeritus
Robert C. Hsu, Ph.D., Associate Professor of Economics
Frank W. Puffer, Ph.D., Associate Professor of Economics, Dean of Academic Affairs
Alan F. Gummerson, Ph.D., Assistant Professor of Economics
Donald E. Wise, Ph.D., Assistant Professor of Economics and Business Administration
Jang H. Yoo, Ph.D., Assistant Professor of Economics

UNDERGRADUATE PROGRAM

The undergraduate program is designed to give the student a comprehensive grasp of the underlying principles and functions of economic institutions, and to develop habits of systematic thought. Economics 10, Issues and Perspectives, is prerequisite for all "100"-level courses and for Economics 11, Principles of Economics. Economics 11 is prerequisite for "200"-level courses in the department. Majors in economics are required to take Economics 205.1 and 205.2, (Micro and Macro) and are strongly advised to take Economics 160, Introduction to Statistical Analysis. Students planning on graduate study in economics are advised to elect courses in Economic Theory, Statistics and Econometrics and Mathematics. Prerequisites for the M.B.A. degree may be completed as part of the undergraduate major.

All majors in economics must take Economics 10, Issues and Perspectives, Economics 11, Principles, and Economics 205.1 and 205.2, Intermediate Theory. Economics 160, Statistics, is strongly recommended for all majors and required for some tracks. Students in their last three years must take no less than 50% nor more than 80% of their work in economics and courses appropriate to extended majors.

Candidates for departmental honors may engage in a program of independent study off-campus during two modules of the junior year. These students may work for business firms or government agencies in applied economic research and receive academic credit.

An optional honors program permits seniors to enroll in an "honors seminar" and write a thesis. This option does not require study away from the campus.

Some advanced courses may be offered only in alternate years. Detailed course descriptions are available at the department office and at the Registrar's Office.

GRADUATE PROGRAM

The university offers facilities for graduate study and research leading to the Master of Arts and Doctor of Philosophy in Economics and with the cooperation of the Department of Management, to the Master of Arts in Applied Economics.

Graduate students may elect to take a limited amount of work in related courses offered by other departments.

Scholarships and fellowships are available for a limited number of well-prepared students. These appointments exempt their holders from tuition fees and some carry stipends in varying amounts. Several teaching assistantships are also awarded which enable graduate students to gain experience in undergraduate instruction. These carry remission of tuition and a cash payment, up to $3,200 for part-time work (one-half).

MASTER OF ARTS PROGRAM

Students interested in the application of economics to operational situations in business and government are encouraged to enroll in the M.A. program in applied economics. This program is built around a core of economic theory and econometrics plus a choice of applied business fields, actual on-site research — consulting experience and a thesis. With adequate prerequisites full-time students can complete this program in one year.

Students enrolled in the Ph.D. program may be awarded the M.A. degree upon satisfactory completion of the three Ph.D. "special fields"; or, in the case of students who do not continue toward the Ph.D., upon satisfactory completion of an approved program of course work, the writing of an M.A. thesis and an oral examination.

A student should discuss his plans with the graduate student advisor on or before registration day and secure approval of his course program.

DOCTOR OF PHILOSOPHY PROGRAM

Two full academic years of graduate work, or its equivalent in part-time work, is necessary for admission to Ph.D. candidacy. One of these years must be spent in residence at Clark University. In residence is broadly defined as work done at Clark University under the immediate personal supervision of at least one member of the university faculty.

All candidates for the Ph.D. in economics are required to demonstrate proficiency in Econometrics and Mathematical Economics, i.e., by passing designated courses offered in the department or, in the case of prior preparation, by passing a test given by the department.

Each student in the Ph.D. program is required to demonstrate proficiency in Economic Theory. The Economic Theory requirement includes Micro-theory, Macro-theory and the History of Doctrine. Use of mathematics may be required in the examination in Economic Theory. The student satisfies the Economic Theory requirement by passing course examinations usually at the end of the first year of graduate study.

Upon completion of the Economics Theory, the examination and other required preparations, and after the student satisfies the requirements for completion of his three special fields, he is admitted to candidacy for the Ph.D. These fields may be selected from among the following: Monetary Economics, Public Finance, Industrial Organization, International Trade, Labor, Regional Economics, Econometrics Advanced Theory or one field selected from related subjects. If Econometrics or Advanced Theory is selected as a special field, the level of performance required is substantially higher than the general requirement in Econometrics and Economic Theory for all Ph.D. candidates. The choice of fields must be cleared in advance with the graduate student advisor. Field courses are typically offered on alternate years. Soon after having completed the field requirements, each student is expected to develop a written prospectus of his dissertation, and then to make a presentation before an informal conference with his dissertation committee demonstrating *both* the extent of his knowledge of his dissertation field and the feasibility of the proposed topic.

Upon completion of the dissertation in a form acceptable to his committee, the candidate will make a copy of the dissertation available to the department, the staff and graduate students in the department. After a period of approximately two weeks, to permit a wider reading of the dissertation within the department, the candidate will present his dissertation at a seminar open to all staff and graduate students in the department. Final approval of the dissertation will be granted by the committee after consideration of any suggestion of changes or challenges arising from the final seminar. Unless the dissertation is completed and defended within five calendar years from admission to candidacy, the certifying examinations must be repassed.

The dissertation must be a real contribution to knowledge, based upon independent research, convincingly presented and acceptably written. Published articles may be accepted by the department instead of a dissertation.

Some teaching experience at Clark or such other teaching as the department may regard as equivalent is prerequisite to the doctor's degree.

COURSES

10. ISSUES AND PERSPECTIVES.

By analysis of important current policy issues the student is introduced to the vital contribution economics can make to systematic thought and understanding. Rather than emphasizing economic theory, the course begins with issues in the social sciences that are of obvious and important concern. From a study of issues the course proceeds to show how development and use of some very basic economic concepts can aid materially in the analysis. Open to freshmen. Multiple sections.
Full course, Modules 1-2.
Full course, Modules 3-4.
Full course, Module 5. Staff.

11. PRINCIPLES OF ECONOMICS.

An introduction to economic analysis. This course develops a basic set of economic concepts utilized in the

"200"-level courses offered in the department. Basic elements of price and income theory are emphasized. Policy questions are treated both to reinforce concepts and illustrate applicability of the analysis. Open to freshmen. Prerequisite: Economics 10.
Full course, Modules 3-4.
Full course, Module 5. Staff.

107. INTERNATIONAL FINANCIAL DEVELOPMENTS.

This course traces the development, roles, importance and problems in international finance. A multinational world requires an efficient international financial system. Yet, design of a system that permits orderly international trade and retains national identity and autonomy in vital areas of policy is a difficult and incomplete task.
Full course, Modules 3-4. Mr. Van Tassel.

113. MONETARY ECONOMICS: THEORY AND POLICY.

Not offered, 1975-76.

The theory of money, its role in the modern economy. Determinants of the supply of money and analysis of the role of monetary policy in stabilization policy.
Full course, Modules 3-4. Staff.

115. PUBLIC EXPENDITURES.

Not offered, 1975-76.

Issues of priorities in the composition and size of public expenditures. Evaluation of the federal budget (expenditures and revenues) according to criteria of efficiency, equity and administrability. Examination of goals of employment, price stability and growth and role of fiscal policy instruments in achieving them.
Full course, Modules 3-4. Ms. Ott.

116. TAX SYSTEMS AND POLICIES.

Not offered, 1975-76.

The course outlines federal taxes and tax policies in the United States. It explains emerging issues in federal taxation — tax equity, the effect on income distribution, the relative tax burden of the rich and the poor and tax reforms, and discusses alternative solutions. Taxes as a tool for economic stabilization and growth are also analyzed.

Ms. Ott.

121.1. INTRODUCTION TO ACCOUNTING PRINCIPLES.

A first course in financial accounting designed to meet academic needs of: a) students who will take only one course in accounting to obtain a good understanding of financial information such as that which appears in standard financial reports, b) students who will be interested in work in managerial accounting as well as financial accounting, c) students who will continue the study of accounting in intermediate and advanced courses. For certain programs this course may be considered the equivalent of Management 205 — Introduction to Accounting, which is desirable but is not a prerequisite for this course.
Half course, Module 1. Mr. Nicholson.

121.2. INVESTMENT ANALYSIS.

Familiarity with topics covered in Economics 121.1, Introduction to Accounting, is a prerequisite for this course. The course covers definition of securities, describes various securities markets, explains speculatio and speculative markets, reviews relevant tax law and looks at sources of investment information. It also covers valuation of bonds and stocks, principles of portfolio analysis and management and the behavior of security prices.
Half course, Module 2. Mr. Nicholson.

123.1. SPECIAL PROBLEMS: OIL.

Not offered, 1975-76.

This course examines the evolution of the oil "crisis." Among topics treated are: availability of oil, feasibility of domestic alternatives, Middle Eastern and big-company politics and economics, environmental issues, tax favoritism, industrial structure and the limits to self-sufficiency.
Half course, Module 1. Mr. Van Tassel.

123.2. SPECIAL PROBLEMS: AGRICULTURE.

Not offered, 1975-76.

We, as students and faculty, living in and concerned with the problems of a developing urban society, often do not fully recognize the dynamic nature and very important contribution of agriculture in economic development. This course will examine the role of agriculture and various strategies for agricultural development. Attention will be paid to the behavior and problems of farmers as microeconomic units, and to the sectoral relationship between agriculture and industry in economic development. Policies conducive to agricultural development will be discussed. Finally, some agricultural marketing problems of the underdeveloped countries will be analyzed.
Half course, Module 5. Mr. Hsu.

123.3. SPECIAL PROBLEMS: WAGE-PRICE CONTROL.

Not offered, 1975-76.

Since 1971, the United States has been going through several "phases" of what is alleged to be a temporary experiment with wage and price control. Other nations have long utilized "incomes" policies to attempt to control inflation without having large-scale unemployment. There are prominent professionals who argue for continued wage-price controls in the United States; other professionals who argue against controls even on a temporary basis. This course proposes to examine two central questions: First, why is there an argument? Has our economy changed in some way so that controls are needed? Are there viable alternatives? Second, what are the major problems in developing and operating a system of wage-price control? Recent experience in the United States and Europe will be examined.
Half course, Module 5. Mr. Van Tassel.

24. ECONOMIC THOUGHT AND MODERN IVILIZATION.

his new course is broadly interdisciplinary. It mphasizes the relationship between economics and elated areas, such as philosophy, ethics, political cience, sociology, mathematics and statistics. eginning from the perspective of economic thought, the ourse traces developments in economic analysis, howing how economic analysis has both affected and een affected by the contact with other disciplines. The ourse considers how modern economic thought has ome to diverge in essential aspects from the ideas of ocial philosophers like Adam Smith and Karl Marx, and mphasizes what scientific economic analysis does and oes not enable us to understand about modern social roblems and issues.
ull course, Modules 3-4. Mr. Nicholson.

126.1. PUBLIC POLICIES TOWARD BUSINESS.

Government power can be used to modify business practice. By what general means can this power be exercised; guided by what criteria; with what degree of effectiveness? Topics trace development of anti-monopoly regulation, and consumer protection, emphasizing factors affecting economic performance. Special attention is paid to the impact of the modern corporation on the economic and political system in the United States and the world economy. Open to freshmen.
Full course, Modules 1-2. Mr. Nicholson.

126.2. PUBLIC REGULATION OF BUSINESS.

Large areas of the economy of the United States are subjected to detailed regulation. These areas include the transportation and public utilities industries (i.e. electric power, natural gas, telephone, television, radio and other communications companies). The course deals with theory and practice of the economics of regulation which is a subject of growing interest and importance. Special attention will be given to problems of transportation economics and current problems in the telephone and television industry. Open to freshmen.
Full course, Modules 3-4. Mr. Nicholson.

150. CRITIQUES OF THE AMERICAN ECONOMY.

Course will examine radical critiques of U.S. economy. A neo-Marxist analysis will provide an overview followed by in-depth examinations of alleged U.S. economic imperialism, the extent of the economy's dependence on military spending and the nature of income distribution and poverty in the U.S.
Full course, Modules 1-2. Mr. Gummerson.

160. INTRODUCTION TO STATISTICAL ANALYSIS.

Basic concepts and techniques of statistical method in economic analysis: descriptive statistics; permutation and combination; an introduction to probability theory; sampling distribution; standardized normal distribution and other related distributions; simple and multiple regression; simple forecasting and statistical decision-making.
Full course, Modules 1-2. Mr. Wise.

161. ECONOMIC FORECASTING.

Model-building techniques and the application of the computer to forecast economic variables — simple models for changes in investment, consumption, government expenditures, money supply and GNP. Computer programming is not required. Students will learn how to utilize the computer facilities.
Full course, Module 5. Mr. Yoo.

176. COMPARATIVE ECONOMIC SYSTEMS.

Many different political and economic systems exist in the world. Most systems are continually undergoing changes that gradually, but importantly, affect their performance. This course surveys both the major theoretical models of economic systems and the actual workings of contemporary economic systems. Mixed economics, market socialist and centrally planned economies are examined.
Full course, Modules 1-2. Mr. Hsu.

177. CHINESE ECONOMY.

Since 1949, when the People's Republic of China was founded, the Chinese economy has gone through great vicissitudes. There have been many unexpected turns of events; to the Chinese leadership, the road to both economic development and socialism proves to be more arduous than socialist theories would suggest; to critics abroad, the Chinese leadership proves to be more pragmatic and the economy more resilient than expected. The objectives of this course are to examine, with the aid of economic analysis, these economic changes that have profoundly affected the lives of one quarter of mankind, and to see whether "the Maoist model" of economic development can be of any help to other developing countries.
Full course, Modules 3-4. Mr. Hsu.

205.1. MICROECONOMIC THEORY.

The objective of the course is to describe and analyze how a market-oriented economy functions in answering five basic economic questions. These are: a) What commodities to produce? b) How much of each to produce? c) What productive techniques to use and how to provide incentive? d) How to distribute the output among the various members of society, and e) What provision to make for the future? Interspersed with the theory, the course contains frequent examples that demonstrate the use of microeconomics in solving problems faced by the decision-making unit in both the private and public sectors.
Full course, Modules 1-2. Mr. Yoo.

205.2. MACROECONOMIC THEORY.

This course focuses mainly on the forces that affect the overall performance of the economy. It is a study of the

determinants of economic activity (such as consumption, investment, government purchases and exports); measures of economic performance (such as the level and rate of growth of national income and product, the level of employment and unemployment, the general price level and the nation's balance of international payments). In addition, the course deals with specific current economic problems facing the U.S. economy, discusses public policies instituted to deal with them, their success or failure and the repercussions of some of these policies on world economies.
Full course, Modules 3-4. Mr. Hsu.

207. INTERNATIONAL ECONOMICS.

Applies and develops concepts of economic theory to such questions as: determinant of international and regional specialization and trade, the theory of tariff intervention, the balance of payments, adjustment forces and disequilibria, and application of theory to important issues in international trade.
Full course, Modules 1-2. Mr. Hsu.

222. LABOR AND MANPOWER. *Not offered, 1975-76.*

The collective actions of organized workers and employers are important influences in our economy. This course analyzes labor-management behavior, showing both how these groups respond to pressures and market changes and how their responses in turn are independent factors affecting employment, growth and inflation.
Full course, Modules 3-4. Mr. Wise.

224. HISTORY OF ECONOMIC DOCTRINE.

Economic thought profoundly influences modern society even when it is not well understood. Policy-makers are affected by economic thought in ways which are not always fortuitous. The great English economist, Lord Keynes, has written, "Madmen in authority who hear voices in the air are distilling their frenzy from some academic scribbler of a few years back." This course is a survey of developments in economic thought. It traces the sense in which economics has evolved as a science — a method of thinking clearly about complex and important social problems. Attention is also paid to the influence of economic thought on noneconomists — on policy-makers and by general citizens.
Full course, Modules 3-4. Mr. Nicholson.

228. ECONOMIC DEVELOPMENT.

This course will examine the major theories of economic development, the major problems confronting the less developed countries and the policies and strategies appropriate for economic development. The purposes are to show the relevance of economics in international development, to promote an understanding of the problems of the less developed countries and to help provide analytical skills useful to students interested in a career in international development.
Full course, Modules 3-4. Mr. Hsu.

261. PROGRAMMING FOR ECONOMISTS.
Not offered, 1975-76.

Introduction to FORTRAN programming with emphasis of the use of the computer in economic research and analysis.
Full course, Modules 1-2. Mr. Wise.

265. BASIC ECONOMETRIC THEORY.

Introduction to econometric methods; statistical inferences and testing hypotheses; model-building technique and theoretical justification of the model and the estimation method used. Various estimation methods will be presented and evaluated in terms of their performance and validity in economic empirical studies.
Full course, Modules 1-2. Mr. Yoo.

266. APPLIED STATISTICS AND ECONOMETRICS.

Integration of statistical concepts with the estimation and forecasting of economic variables: estimation of production function; cost analysis; quality analysis; linear programming; input-output method; estimation of aggregate supply and demand function; model for national economy. Prerequisite: Economics 160 or 265.
Full course, Modules 3-4. Mr. Yoo.

271. INTRODUCTION TO MATHEMATICAL ECONOMICS.

An introductory survey of the use of mathematical methods in economic analysis. Special attention is given to the mathematical framework of the theory of price determination. Prerequisite: consent of the instructor.
Variable credit.
Modules 1-2-3-4. Mr. Yoo.

272. MATHEMATICAL ECONOMICS.
Not offered, 1975-76.

Mathematical approach to microeconomic theory including general equilibrium. Intended for advanced undergraduate students with some knowledge of calculus and linear algebra. This course may be taken in lieu of Economics 205.1.
Staff.

280. JUNIOR HONORS.

Designed to assist honors candidates in integration of the field.
Variable credit.
Modules 1-2-3-4-5. Staff.

281. SENIOR HONORS.

Variable credit.
Modules 1-2-3-4-5. Mr. Puffer, Staff.

282. HONORS.

Eligible students selected by the department may work off campus for a summer and two modules as junior professional economists in business, government or industry and receive academic credit.
Variable credit.
Modules 1-2-3-4-5. Staff.

01.1. ECONOMIC THEORY.
ull course, Modules 1-2. Ms. Ott.

01.2. MICROECONOMICS.
ull course, Modules 3-4. Mr. Wise.

02.1. ECONOMIC THEORY.
ull course, Modules 1-2. Staff.

02.2. MACROECONOMICS.
ull course, Modules 3-4. Mr. Yoo.

12. APPLIED MACROECONOMICS.
ull course, Modules 1-4. Mr. Puffer, Staff.

13. SEMINAR IN MONETARY ECONOMICS. *Not offered, 1975-76.*
ull course, Modules 1-2-3-4. Staff.

22. LABOR SEMINAR. *Not offered, 1975-76.*
Mr. Wise.

25. PUBLIC FINANCE SEMINAR.
ull course, Modules 1-2-3-4. Ms. Ott, Mr. Maxwell.

26. INDUSTRIAL ORGANIZATION SEMINAR. *Not offered, 1975-76.*
Mr. Nicholson.

327. INTERNATIONAL TRADE SEMINAR.
Mr. Van Tassel.

328. ECONOMIC DEVELOPMENT. *Not offered, 1975-76.*
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Hsu.

377. REGIONAL SEMINAR. *Not offered, 1975-76.*

Education

DEPARTMENT FACULTY

William C. Kvaraceus, Ed.D., Professor of Education and Sociolgy; Department Chairman
Helen J. Kenney, Ed.D., Professor of Education
David Zern, Ph.D., Associate Professor of Education, Adjunct in Psychology
Irving A. Schwartz, M.A., Assistant Professor of Education and Clinical Instructor in Social Studies, Adjunct Assistant Professor of Geography
Marcia A. Savage, Ed.D., Assistant Professor of Education
William E. Topkin, Ed.D., Assistant Professor of Education
Lawrence Bader, Ph.D., Assistant Professor of Education (Affiliate)
Eleanor R. Moosey, Ed.D., Assistant Professor of Education (Affiliate)
Spencer R. Potter, Ed.D., Lecturer in Education
With the cooperation of Professor Schatzberg and Professor Reid of the Department of Foreign Languages and Literatures; Professor Tepper of the Department of Mathematics; Professor Ford of the Department of History; Professor Knos of the Graduate School of Geography; Professor Beck of the Department of Philosophy; Professor Krueger of the Fine Arts Department; Clinical Instructor in English, Victoria Trachtenberg; Clinical Instructors in Elementary Education, Barbara Kohin, Hessa Miller and Deborah Zern.

UNDERGRADUATE PROGRAMS

The department encourages all students who may be interested in preparing for careers in education to consult with some member of its staff early in their careers at the university. During the first two years, students should complete as many specific requirements for the degree of Bachelor of Arts as possible, and lay a broad foundation of scholarship in the subjects in which they wish to specialize. However, a limited set of experimental courses has been made available for selected freshmen and sophomores. Special permission is required for admission to education courses taken at the undergraduate level. Generally, the actual election of courses in education should be postponed until the junior year.

In conformity with its policy of emphasizing the importance of scholarly background, the department offers its courses as electives, and not as undergraduate majors.

However, to prepare those students contemplating careers in education, the department provides a number of internship experiences in the senior year. These internships offer coordinated course work and practicum experiences in elementary education with a special focus on early childhood and the primary grades, in selected secondary level subject matter areas and in special education. A special sequence provides first level training in school psychology.

The internship program serves as a transition to professional study at the graduate level and for entry into beginning teaching and special assistant positions. Teaching certification in Massachusetts can be gained upon completion of the planned sequence of academic and practicum experiences.

The internship module is limited to seniors who have completed major requirements at a satisfactory level of scholarship. Most interns carry their internship for a 3 to 4 course credit block during either the first and second modules or the third and fourth modules of their senior year. The decision to elect the internship module must be made before the end of the junior year, and must be approved by the Department of Education and reviewed by academic departments for competency in subject matter areas for secondary school teaching.

GRADUATE PROGRAMS

The department offers one program leading to the degree of Master of Arts in Education and another leading to the degree of Doctor of Education.

MASTER OF ARTS IN EDUCATION:

Admission Requirements: In addition to the general admission requirements of the Graduate School, a personal interview is usually required by the Department of Education.

Programs Available: Three programs leading to the degree of Master of Arts in Education are available:

1) A full- or part-time program in early childhood care and education for students with a bachelor's degree and strong academic background. Experienced students may complete the program in one year. It includes advanced work in the academic fields and internship experiences.

2) A transitional program in educational analysis leading to doctoral work in educational psychology or educational sociology.

3) Extended Training for certified teachers.

Program Requirements:

1) *Courses:* for further details on course requirements, consult the Department of Education.

2) *Internships:* The department provides opportunities for extended internships with supervision.

3) *Thesis or Additional Study in Lieu of Thesis:* All candidates for the degree of Master of Arts in Education must choose one of the following plans:

Prepare an acceptable thesis.

Elect, in lieu of thesis, two additional full courses.

Elect, in lieu of thesis, a seminar in which intensive work will be required in preparing and presenting professional papers before fellow graduate students and members of the staff.

4) *Final oral examination:* The passing of a final oral examination will be required of all candidates.

DOCTOR OF EDUCATION

The major thrust of the graduate program in the Department of Education at Clark University is to develop an educator with conceptual and practical skills in understanding and dealing with the processes and problems of schools, using a variety of approaches from the social sciences. This person may work in a school system, a university or with a private agency. Working as an *Educational Analyst,* he or she may be engaged in the design, administration or evaluation of new or presently existing programs at different points in his career.

The psychological or sociological orientation of the *Educational Analyst* will help to differentiate the kinds of background knowledge and competence to be acquired If, for example, curriculum changes in the area of language arts are of concern to the student, more work will be focused in basic psychology, educational psychology, and pedagogy. If community involvement in education is the orientation, more work in sociology, anthropology, educational sociology and political sciences may be appropriate.

There are four major components to this doctoral program: 1)*Social Science Foundations.* Depending upon the individual student's orientation, he will pursue an extended program relating psychological and sociological perspectives to issues in education. All students will be expected to acquire expertise in both foundation fields that will be examined through a variety of learning experiences, including integrative field studies; 2) *Educational Process.* Students will acquire or otherwise demonstrate an appropriate level of competence in understanding and applying bases and criteria involved in curriculum decisions, development and implementation; 3)*Research and Evaluation.* All students will be expected to demonstrate or otherwise acquire an appropriate level of competence in statistical procedures and research design; and 4)*Consultation and Group Dynamics.* All students will be expected to participate in specific experiences aimed at developing the interpersonal skills needed to work effectively with small groups and to develop effective supervisory and consulting techniques.

The formal course of study is annually evaluated through individual assessments including the required preliminary exams. The design and preparation of a dissertation is the final requirement of the program, offering the student the opportunity to study in depth a topic of specific concern to him.

Applicants for admission to the program will be expected to give evidence of high scholarly achievement and leadership promise in their field. Other evidence of potential such as results from Graduate Record Examinations, Miller Analogies, etc. may be required. Potential candidates are encouraged to sit in on graduate classes and otherwise familiarize themselves with the graduate program before completing formal application procedures. Personal interviews with staff of the department will then be required before applications are acted upon. In special cases, foreign students may be excused from the examination and interview requirement.

The department admits to graduate work only those students who plan to enroll in the Ed.D. program on a full-time basis. A residence requirement demands a minimum of full-time study (not less than ten full courses beyond the master's degree). The student is required to pass his course work with distinction. The number of courses to be taken is determined through consultation with the student's individual advisor, but generally calls for eight or ten modules of full-time study beyond the master's program. Language requirements in the department are optional and relate to the student's background and future professional goals.

OURSES

38. DIRECTED READINGS - UNDERGRADUATE.

ariable credit.
lodules 1-2.
lodules 3-4.

05. CONTEMPORARY ISSUES IN EDUCATION.

he aim of the course is to provide an introduction to the liscipline of education. The experience will be intensive, ommitting the student's time and energies full-time for ive days a week, with additional reading to be done in the vening and/or on weekends. Structurally, the learning xperiences will be developed in the following manner: a articular theme will serve as the focus for each of the even weeks during which the course will take place. ypical themes are: Education for Self or Society; eachers and Teaching in Higher Education; To Grade or lot to Grade; Educating the Child Who is Different; chool Reform; Radical Vision and the Roots of radition; The Young Child; Comparative Study of Day are.
ull course, Module 5. Staff.

140. MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS.

Refer to course description under Mathematics 14.
Full course, Modules 3-4. Staff.

150. SEMINAR IN MATHEMATICAL METHODS AND MATERIALS.

Refer to course description under Mathematics 150.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Tepper.

201.1. EDUCATIONAL PSYCHOLOGY: PRINCIPLES OF CHILD DEVELOPMENT.

Principles of child development with emphasis upon maturation and learning in the elementary school years. Recommended for those planning to take Internship Module.
Full course, Modules 1-2. To be announced.

201.2. EDUCATIONAL PSYCHOLOGY: PRINCIPLES OF ADOLESCENT DEVELOPMENT.

Principles of adolescent development with special emphasis upon learning and personality development in the secondary school years. Recommended for those planning to take the Internship Module.
Full course, Modules 3-4. Ms. Savage.

203. INTERNSHIP: TEACHING GEOGRAPHY.

Refer to course description under Geography 203.
Mr. Knos, Staff.

204. CURRICULUM DEVELOPMENT AND ANALYSIS IN GEOGRAPHY AND HISTORY.

Refer to course description under Geography 204 and History 290.
Full course, Modules 1-2. Mr. Knos, staff.

205.1. METHODS OF TEACHING AND RESEARCH IN EDUCATIONAL SYSTEMS.

Refer to course description under Geography 205.1.
Full course, Modules 1-2. Mr. Knos, Staff.

205.2. EDUCATION AND GEOGRAPHY INTERNSHIP SEMINAR.

Refer to course description under Geography 205.2.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Knos, Staff.

206. AUTOBIOGRAPHY WORKSHOP.

Refer to course description under Geography 206.
Half course, Modules 1-2. Mr. Knos, staff.

211. FIELD OBSERVATION: COGNITIVE AND SOCIAL-INTERPERSONAL BEHAVIOR IN THE CLASSROOM SETTING.

Dual focus on: 1) illustration and analysis of various cognitive and social interpersonal models of human behavior in the classroom setting, and 2) introduction to and development of skills involved in systematic observational methodologies, with the classroom as the natural setting in which the work is done. Students carry out a series of assigned observation tasks and execute their own individual projects.
Full course, Modules 3-4. Mr. Zern.

216. EARLY DEVELOPMENTAL PROCESSES: THEORY AND PRACTICE.

A selective consideration of some basic theoretical models of normal human development, analyzing their implications for understanding the determinants of behavior in infancy and early childhood, and their consequences in later development, particularly in terms of various developmental deviations. Students will observe normal and "special" children of various ages (infancy through adolescence) in various home and institutional settings. Classroom discussions and assignments will focus on relating the theory to the behaviors observed in the field.
Half course, Modules 1-2.
continues
Half course, Modules 3-4. Mr. Zern.

217. INTERNSHIP TEACHING.

An intensive period of observation and teaching in a secondary level or special subject field in which the student plans to teach. Individual supervision is given by the academic department and by a teacher in a cooperating school. Admission on consent of both the academic and education departments.

One and one-half course, Modules 1-2.
One and one-half course, Modules 3-4.
Academic Departments, Staff and Cooperating Teacher.

222. ATTENTION AND ATTACHMENT: ISSUES IN INFANT CARE.

Not offered, 1975-76.

The attention processes and the attachment behaviors of the infant will be emphasized in this course on the first years of life. Both theoretical and research literature will be analyzed. Direct observations of infants and relevant films will also be utilized.
Full course, Module 5. Mr. Zern.

230. CREATIVE DRAMATICS IN EDUCATION.

Refer to course description under Theatre Art 290.

234. FIELD PROJECTS.

Provides individualized and extended experiences in a wide variety of agencies and institutions involving the education and comprehensive care of children and youth. Supervision is provided by the university and field agency personnel; combines related seminars and conferences as a basis for critical analysis of the experiences within the context of applied theory and practice.
Variable credit. Modules 1-2-3-4-5. Ms. Kenney, Mr. Kvaraceus, Staff.

236. RESEARCH IN BILINGUAL EDUCATION.

Students will be part of a research team investigating various aspects of bilingual functioning and other issues relevant to the implementation of bilingual education programs.
Full course, Modules 1-2. To be announced.

242. EMOTIONAL PROBLEMS AND SCHOOL LEARNING.

Considers the psychodynamics of emotional disturbance in children and adolescents, diagnostic and remediation techniques and various educational approaches. Involves practicum experiences with disturbed children.
Full course, Modules 3-4. Ms. Kenney.

250. SCHOOL AND COMMUNITY.

An investigation of the school and community relationship including parent and teacher association, citizens groups, school committees, community schools and schools as communities.
Full course, Modules 1-2. To be announced.

251. AMERICAN YOUTH IN SCHOOL AND SOCIETY.

Not offered, 1975-76.

Considers the role, development and education of youth with special consideration of youth's involvement in the changing school system and other youth-serving agencie and institutions.
Full course. Mr. Kvaraceus.

260. LINGUISTICS AND LANGUAGE LEARNING.

Not offered, 1975-76.

Refer to course description under Linguistics. Prerequisite: Linguistics 114, which may be taken either prior to or concurrently with this course, and for which substitutes may be available if the instructor is consulted well in advance; permission required. Given in alternate years.
Full course, Modules 1-2. Mr. Reid.

269. SPEECH AND COMMUNICATION DEVELOPMENT AND DISORDERS.

This course is primarily for undergraduate students enrolled in the Special Education sequence. Others by special permission. An overview of normal language and speech development will be given and factors involved in the diagnosis and remediation of various types of speech and communication disorders will be considered. In addition to readings, case study material and resource specialists will be involved.
Full course, Modules 3-4. To be announced.

272. (1-6). SEMINAR IN STUDENT TEACHING.

Conference course running concurrently with student teaching at the secondary level and in special subject fields. The seminar aims to develop the students' problem-solving ability as it relates to the specific issues and concerns of the classroom.

272.1. Seminar in Teaching English.
272.2. Seminar in Teaching Foreign Language.
272.3. Seminar in Teaching Social Studies.
272.4. Seminar in Teaching Science.
272.5. Seminar in Teaching Art.
272.6. Seminar in Teaching Theatre.

Half course, Modules 1-2.
Half course, Modules 3-4. Academic Departments.

273. SEMINAR IN METHODS AND CURRICULUM IN MATHEMATICS TEACHING AT THE SECONDARY LEVEL.

Full course, Modules 3-4. Mr. Tepper.

280. JUVENILE DELINQUENCY AND THE SCHOOL.

Considers the role of the school as a central agency in the prevention and control of norm-violating behavior.
Full course, Module 5. Mr. Kvaraceus.

281. RESEARCH IN CLASSROOM DISEQUILIBRIUM.

Application of formulated observational schemes to the functioning of ongoing classrooms of various grade levels. Students will be trained as observers and help to refine the techniques being used. After that development, each student will design his/her own research proposal in

onjunction with the instructor, and proceed to execute it s appropriate.
ialf course, Modules 1-2. Mr. Zern.
ourse continues Modules 3-4 as another half course.)

82. INSTRUCTION AND CURRICULUM DEVELOPMENT T THE SECONDARY LEVEL.

n introduction to the fundamentals of the instructional rocess and curriculum planning in secondary education.
alf course, Module 1. Mr. Schwartz.

82.(1-7). INSTRUCTION AND CURRICULUM IN UBJECT FIELDS.

rinciples of curriculum development and teaching in pecific and special subject fields.
282.1. Instruction and Curriculum Development in English.
282.2. Instruction and Curriculum Development in Foreign Languages.
282.3. Instruction and Curriculum Development in Social Studies.
282.4. Instruction and Curriculum Development in Science.
282.5. Instruction and Curriculum Development in Art.
282.6. Instruction and Curriculum Development in Theatre.
282.7. Instruction and Curriculum Development in Media Studies.
Half course, Module 2. Academic Departments.

285. ELEMENTS OF DIAGNOSTIC PRESCRIPTIVE TEACHING.

Planning individual instruction with classroom application.
Half course, Modules 1-2.
Half course, Modules 3-4. Ms. Holland.

287. INTERNSHIP MODULE IN ELEMENTARY EDUCATION.

This integrated internship provides an intensive work-study experience in elementary schools and other educational agencies in the Worcester area. It involves theoretical course work; a full-time supervised experience in schools or in some other educational, welfare or recreation agency; and related workshops, seminars and conferences. The elementary module provides credit in the following areas: student teaching (two full courses including the professional teaching seminar) with three half-courses distributed to cover curriculum, methods and materials of instruction in the basic elementary school program. Limited to seniors who will have completed major requirements and whose grade point average reflects high level of scholarship. Student contemplating internships must make application during their junior year.
Three-and-one-half course.
Modules 1-2.
Three-and-one-half course. Ms. Kenney, Staff and
Modules 3-4. Cooperating Teachers.

288. SOCIOLINGUISTICS.

Cross-disciplinary perspectives on language behavior, communicative competence, attitudes and socio-cultural variations as they affect individuals, groups and societies. A modest study will be designed and carried out by the students.
Full course, Modules 3-4. To be announced.

289.(1-3). PRACTICA IN SPECIAL EDUCATION.

The department offers a number of specialized practica that provide an in-depth experience teaching children with special needs. A student may select one practicum in the second half of the year following completion of the basic internship teaching module. Each practicum is designed to focus on a specific degree of learning need — mild, moderate or severe — and on a particular program setting — regular education with modifications, substantially separate programs or a day school in a facility other than a public school.
289.1. Practicum in Teaching School Age Children with Mild Special Needs.
289.2. Practicum in Teaching School Age Children with Moderate Special Needs.
289.3. Practicum in Teaching School Age Children with Severe Special Needs.
Full course.
Modules 3-4 (Pre-requisite Ed. 287). Ms. Kenney, Staff,
Cooperating Teachers.

290. PHILOSOPHY OF EDUCATION.

The aims, processes and materials of education with special reference to the influence of philosophical ideas on educational problems.
Full course, Modules 1-2. Mr. Beck.

291. DEVELOPMENTAL DEVIATIONS: LEARNING PROBLEMS AND EDUCATIONAL INTERVENTIONS.

Special needs children whose developmental problems involve mental retardation, emotional disturbance, neurological impairment, physical handicaps and social maladjustment will be studied. Educational programs to meet these needs in regular classrooms and special centers will be reviewed. Observations will be arranged. Prerequisite: permission of the instructor. Limited to juniors and selected sophomores.
Full course, Module 5. Ms. Kenney.

292. PRACTICUM - FIELD PLACEMENTS IN SPECIAL EDUCATIONAL AND CLINICAL SETTINGS.

Must be taken concurrently with Education 291. Course meets 15-20 hours per week including a weekly two-hour practicum seminar. Prerequisite: permission of the instructor. Limited to juniors and selected sophomores.
Full course, Module 5. Ms. Kenney.

294. MATERIALS AND METHODS IN TEACHING SECONDARY ENGLISH.

Refer to course description under English 294.
Full course, Modules 3-4. Staff.

295. METHODS OF ART EDUCATION.

A practical, experiential introduction to art and design education materials, methods and skills as applied to realistic classroom situations.
Half course.
Modules 1-2.
Modules 3-4. Mr. Krueger, Staff.

296. PSYCHO-EDUCATIONAL CASE STUDIES.

Considers psycho-educational assessment of the individual child with educational planning.
Full course, Module 4. Ms. Kenney, Staff.

297. PATTERNS OF CHILD-REARING: A CROSS-CULTURAL ANALYSIS. *Not offered, 1975-76.*

Analysis of various sub-cultural and cross-cultural patterns of child-rearing, dealing with both similarities and differences within the human species. The materials for this consideration will be both theoretical (particular emphasis on Freud and F. Kluckhohn) and descriptive case studies such as Walden II, day care and higher education and the kibbutz.
Full course, Modules 1-2. Mr. Zern.

298. PRE-SCHOOL EDUCATION I: THEORY AND PRACTICE. *Not offered, 1975-76.*

Detailed consideration of day-to-day functioning in the classroom. The rationale behind the various specific techniques will be considered in detail.
Full course, Modules 1-2.

299. PRE-SCHOOL EDUCATION II: PRACTICUM. *Not offered, 1975-76.*

Concurrent with 298. A practicum experience of 10-12 hours per week in various pre-school child care centers.
Full course, Modules 1-2.

303. HUMAN LEARNING AND INSTRUCTION.

Analysis of basic psychological models as they relate to the issues involved in human learning and instruction. Application of these perspectives to the particular situation of the classroom will be considered concurrently with a more abstract consideration of the perspectives themselves.
Full course, Modules 1-2.
(Course continues Modules 3-4 as another full course.)
Modules 3-4. Mr. Zern.

304. CURRICULUM AND INSTRUCTIONAL SYSTEMS.

Considers the theoretical bases of curriculum and examines various instructional methodologies in detail.
Full course, Modules 1-2. Ms. Kenney.

309. THE WORKING ALLIANCE: THEORY/PRACTICE.

This course provides an overview of important concepts related to the working alliance. It is designed to blend theory, experience and application in the area of leader-member interaction and cooperative decision making. Interpersonal skills to be emphasized include: empatheti listening, accurate observations, unambiguous communication and useful feedback. Readings are drawn from the areas of group dynamics, leadership behavior, participatory decision making, the helping relationship and supervision.
Full course, Modules 1-2. Mr. Bader.

311. PRINCIPLES AND PRACTICES OF GUIDANCE. *Not offered, 1975-76.*

Within a rationale for pupil services, consideration will be given to the day-to-day functioning of the so-called guidance counselor — his work within the structure of the system as well as his coordination of services within the school with those of community service agencies.
Mr. Potter.

312.1. INTRODUCTION TO THEORIES OF COUNSELING

Emphasis will be upon the theory and methodology of counseling and upon the management of typical counseling problems. The diagnosis and referral of behavior disorders and related personality maladjustments will be considered. Case material will be presented and analyzed. (311 suggested as a pre-requisite.)
Full course, Modules 1-2. Mr. Topkin.

312.2. COUNSELING PRACTICUM.

Field placement in Worcester area schools and weekly seminars. Relevant readings will be required.
Full course, Modules 3-4. Mr. Topkin.

314. TESTS AND EVALUATION: THEORY AND TECHNIQUES OF MEASUREMENT AND APPRAISAL.

The methods and problems involved in the evaluation of abilities, interests and achievement of children and youth, both by standardized instruments and by special purpose measures.
Full course, Module 1. Mr. Kvaraceus.

315. TESTS AND EVALUATION: PRACTICA.

Provides supervised testing experiences in schools or child welfare agencies. Prerequisite: 314.
Full course, Modules 1-2.
Full course, Modules 3-4.
Full course, Module 5. Mr. Kvaraceus and Staff.

317. INDIVIDUAL ASSESSMENT OF MENTAL ABILITIES.

Theory and intensive experience in administering and interpreting individual tests of intelligence with major emphasis on Stanford-Binet Revision and Wechsler Intelligence Scales. Emphasizes mechanics of

administration and interpretation for use of test results in educational settings.
Half course, Module 2.
Half course, Module 3. (Module 2 prerequisite). Staff.

318. PSYCHO-EDUCATIONAL ASSESSMENT OF THE MULTI-HANDICAPPED.

Considers specialized tests and techniques in the assessment of children who have major learning handicaps. Gives special emphasis to the utilization of consultants in the evaluation process.
Full course, Modules 3-4. Ms. Moosey.

319. PSYCHO-EDUCATIONAL ASSESSMENT AND INDIVIDUALIZED INSTRUCTION.

This course centers on: 1) psycho-educational diagnostic techniques, including both individual and standardized group tests that would be used to gather relevant data on children with special needs; and 2) the analysis and synthesis of psycho-diagnostic data to formulate an effective, individually appropriate educational plan.
Full course, Modules 3-4. Ms. Kenney, Staff.

320. SEMINAR IN THE SOCIOLOGY OF EDUCATION.

An in-depth consideration of a major issue in education informed by discussion and consideration of relevant literature.
Full course, Modules 3-4. To be announced.

323. THE ORGANIZATION AND MANAGEMENT OF PROGRAMS FOR YOUNG CHILDREN I: THEORY AND PRACTICE.

Classroom analysis of the following areas: 1) legislation at the federal, state and local level; 2) the utilization of the agency network; 3) the organizational structure and dynamics of the child care agency; 4) staffing and in-service training; 5) budgeting and cost analysis.
Full course, Modules 3-4. Staff.

324. THE ORGANIZATION AND MANAGEMENT OF PROGRAMS FOR YOUNG CHILDREN II: PRACTICUM.

Concurrent with 323. A practicum experience as an assistant to a day care center administrator, involving 10-12 hours per week.
Full course, Modules 3-4. Staff.

327. SCHOOL CONSULTATION: ISSUES/PROBLEMS.

This course addresses itself to the area of organizational consultation with a special emphasis on school systems. Its purpose is to provide an overview of important conceptual issues faced by consultants in their everyday work. The format will blend theoretical concepts, case study analysis and presentations. The course will become a laboratory for effective consultation in which members will consult with other members and with individuals from the Worcester community invited to present problems for consultation.
Full course, Modules 3-4. Mr. Bader.

331.1. RESEARCH TOOLS AND TESTS.

An introduction to the development of questionnaires and interview techniques coupled with an examination of test validation procedures.
Full course, Modules 1-2. To be announced.

331.2. STATISTICS IN EDUCATIONAL RESEARCH.

An introduction to the descriptive, parametric and non-parametric statistical tests used in educational research.
Full course, Modules 3-4. To be announced.

336.1. LANGUAGE AND COGNITIVE DEVELOPMENT.

Will investigate the language acquisition process, the relationships between language and cognitive development (emphasizing the two- to seven-year-old period), and the effects of dialect and cultural variations on communication processes and learning in educational settings. Theoretical issues and research literature will be analyzed and a modest study will be designed and carried out by the students.
Full course, Modules 1-2. To be announced.

337. THE SCHOOL AS A SOCIAL SYSTEM.

An examination of some of the classical sociological literature on education including works by Durkheim, Ward, Warner, Hollingshead, Hunter, Duncan, Parsons and others.
Full course, Modules 1-2. To be announced.

341. SOCIAL-PSYCHOLOGICAL ISSUES IN EDUCATION.

A consideration of selected issues in American education from the point of view of psychological and sociological perspectives. Planned particularly for entering doctoral candidates — others with permission.
Full course, Modules 1-2. Mr. Kvaraceus,
Ms. Kenney.

343. ANALYSIS OF THE RESEARCH PROCESS.

A critical examination of the nature of the research enterprise conducted primarily through an analysis of the strengths and weaknesses of existing research in the social sciences focused on educational issues. Planned for doctoral students — others with permission.
Full course, Modules 1-2. Mr. Zern.

344. RESEARCH DESIGN.

Critical analysis of alternative ways to design research with some time focused on problems generated by students.
Full course, Modules 3-4. To be announced.

348. METHODS OF SOCIOLOGY AND ANTHROPOLOGY APPLIED TO THE CLASSROOM.

Applies the central ideas and methods of inquiry in the fields of sociology and anthropology to the school and classroom.
Full course, Modules 1-2. To be announced.

350. SOCIOLOGY OF TEACHING AND LEARNING.

A comprehensive examination of some of the best research and the most important findings in the sociology of teaching and learning.
Full course, Modules 3-4. To be announced.

GRADUATE READINGS AND THESIS COURSES

37. DIRECTED READINGS IN EDUCATIONAL SOCIOLOGY.

Variable credit.
Modules 1-2-3-4-5. Staff.

38. DIRECTED READINGS IN EDUCATIONAL PSYCHOLOGY.

Variable credit.
Modules 1-2-3-4-5. Staff.

371. THESIS.

Variable credit.
Modules 1-2-3-4-5. Staff.

379. ADVANCED GRADUATE INTERNSHIP IN EDUCATION.

Variable credit.
Modules 1-2-3-4-5. Staff.

380. DEPARTMENTAL SEMINAR ON CONTEMPORARY EDUCATIONAL PROBLEMS AND ISSUES.

For master's degree candidates who are not writing a thesis. Requires a major paper.
Full course, Modules 3-4. Mr. Kvaraceus, staff.

381. THESIS.

Variable credit.
Modules 1-2-3-4-5. Staff.

English

DEPARTMENT FACULTY

William H. Carter, Jr., Ph.D., Professor of English, Department Chairman
Karl O. E. Anderson, Ph.D., Professor of English
James F. Beard, Jr., Ph.D., Professor of English
Charles S. Blinderman, Ph.D., Professor of English
*James Macris, Ph.D., Professor of English and Linguistics
Stanley Sultan, Ph.D., Professor of English
Serena S. Hilsinger, Ph.D., Professor of English
J. E. Parsons, Ph.D., Associate Professor of English
David H. Abraham, Ph.D., Assistant Professor of English
James P. Elliott, Ph.D., Assistant Professor of English
Arthur F. Kinney, Ph.D., Professor of English (Affiliate)
John Mayer, Ph.D., Associate Professor of English at the College of the Holy Cross (Exchange Professor for Modules 1 & 2, 1975-76)

**On leave, Modules 3-4.*

PROFESSOR EMERITUS

Jesse C. Cunningham, Ph.D., Associate Professor of English, Emeritus

UNDERGRADUATE PROGRAM

An undergraduate major in English and American literature is expected to acquire a liberal education with a broad background in the humanities and social sciences. Insofar as possible, he should attempt to achieve depth and breadth in his understanding of English and American literature. On becoming a major, the student should at once consult with the chairman about choosing an advisor; thereafter, he must discuss his program with his advisor at each registration period and obtain his advisor's approval before registering.

ENGLISH

The English major must take at least eight full courses (sixteen modules) in literature other than English 16, 17, 18, 19 and 161. In addition, he must take a minimum of four full courses (eight modules) of related courses in other fields, as specified under *Related Courses* below. English 10 (Introduction to Literature) provides a valuable foundation for more advanced courses in literature. All students who need to improve their writing skills are strongly urged to elect English 18: Expository Writing.

LITERATURE COURSES

I. The minimum requirement of 8 full courses (16 modules) of literature must include:

A. English 13 (to be taken no later than the sophomore year).

B. One of the following, normally taken before the junior year: English 14 (Modules 1 through 4), English 15 (Modules 1 through 4), English 111 (Modules 1 through 4). (Students will not be permitted to combine two modules of English 14, 15, 111 in meeting this requirement.)

C. A minimum of three full courses (6 modules) in courses or seminars at the 200-level.

II. To make sure that students develop some historical perspective and awareness of the range and variety of English and American literature, all English majors must include in their programs at least:

A. Three full courses (6 modules) dealing with English literature written before 1700 (for example, English 15 (Modules 1 and 2), 200, 203, 206, 212 (Modules 1 and 2), 212 (Modules 3 and 4), 215, 216, 217, 218, 220, 222, 224).

B. Three full courses (6 modules) dealing with English or American literature written from 1700 to 1900 (for example, English 13, 14 (Modules 1 and 2), 14 (Modules 3 and 4), 15 (Modules 3 and 4), 111 (Modules 1 and 2), 111

(Modules 3 and 4), 226, 236, 238, 239, 240, 242, 243, 244, 245, 247, 248, 249).

Students should note that certain courses may be counted towards *two* of these requirements (for example, if one takes English 14 (Modules 1 through 4) to satisfy half of requirement I.B., he may also use these two 2-module courses to meet two-thirds of requirement II.B).

Courses in Foreign and Comparative Literature. A student may count any of the courses listed under "Comparative Literature" (see under Department of Foreign Languages and Literatures) towards the English major. In all cases such electives must be approved by the student's advisor in the English Department as being meaningfully related to the student's overall program of English studies.

Related Courses. The minimum of four full courses (8 modules) of related courses required of the English major must include two full courses (4 modules) of history and two full courses (4 modules) of philosophy. In all cases these courses must be approved by the student's advisor as being genuinely related to the student's overall program of English studies.

Courses Recommended Outside the Major and Related Fields. Like all undergraduates, the English major must elect at least nine full courses (18 modules) outside his major and its related fields. These courses must be selected from the offerings of the following departments: Biology, Chemistry, Economics, Education, Foreign Languages and Literatures, Geography, Geology, Government and International Relations, Linguistics, Mathematics, Physics, Psychology, Sociology, Visual and Performing Arts.

Those students who intend to go on to graduate school should be aware that a reading knowledge of French, German and Latin is frequently required of doctoral candidates.

Honors Program. Majors are encouraged to apply in the spring of their sophomore year to participate in the Honors Program in English. Further information is available from the department.

Cooperative Programs. The range of English offerings open to Clark students has been extended by the establishment of a cooperative arrangement with the English departments at Assumption College and the College of the Holy Cross. With the permission of the department, majors and graduate students may take a few carefully selected courses in literature at these institutions.

GRADUATE PROGRAM

The university offers a program leading to the Master of Arts degree in English. A limited number of scholarships providing tuition remission are available for superior students. The department also offers several teaching assistantships, involving half-time teaching and half-time study, with stipends ranging up to $3,200 plus the remission of tuition.

For the Master of Arts, the student must satisfactorily complete at least eight full courses (16 modules) of work including English 300. Introduction to Literary Studies, English 280. History of the English Language (Modules 1 and 2), and at least one seminar. During the third and fourth modules of his first year in residence, the student must satisfactorily complete English 349: Thesis Workshop; to obtain his degree he must also complete an acceptable master's thesis, English 350 (one full course); he must pass a written Foreign Language Examination (in Greek, Latin, French, German, Italian, Russian, Spanish or other foreign language approved by the department); and he must pass a final oral examination.

COURSES

10. INTRODUCTION TO LITERATURE.

This course provides the student with an opportunity for intensive reading and writing about basic elements of poetry, fiction and drama — such as use of diction, imagery, point of view, tone and structure. Small sections and limited reading lists will help establish an atmosphere conducive to significant class discussion; emphasis will also be placed on the student's writing effectively about his experience with literature. Strongly recommended for the English major. No student may take more than one section of English 10.
Full course, Modules 1-2, 3-4, and 5. Staff.

13. ENGLISH POETRY.

This course, required for the English major, focuses upon the development of the most important forms, themes and movements of English poetry. It emphasizes intensive study and discussion of individual poems. A series of essays on assigned topics is required.
Full course, Modules 1-2. Ms. Hilsinger.
Full course, Modules 3-4. Mr. Sultan.

14. ENGLISH NOVEL.

An exploration of narrative and fictive modes from their earliest appearances in English to the 20th century. In the first semester, texts will include *Moll Flanders, Clarissa, Tom Jones, Tristram Shandy, Frankenstein* and others. Writers considered in the second term will be Thackeray, Dickens, James, Carroll, Hardy, Conrad, Lawrence, Woolf and others. Close attention will be paid both to texts and to their cultural contexts. Literary and intellectual history will figure largely in a survey which views the novel not only as reflector, but also as creator of its milieu. During the year some basic critical stances (e.g., Biographical, Marxist, Freudian, Decadent) will be examined, and their vocabularies will be scrutinized — skeptically.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Parsons.

15. ENGLISH DRAMA.

A course in the major periods of English drama before the twentieth century. Modules 1-2 cover medieval religious

drama and the drama of Tudor and Stuart England. Modules 3-4 cover British drama from 1660 to the earlier twentieth century.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Abraham.

16. CREATIVE WRITING.

A course designed to cultivate and guide student work, particularly in the short story, the lyric poem and the informal essay. Class meetings deal largely with important aspects of the art of fiction; published literary works and student manuscripts are discussed. Not open to freshmen. Offered in Modules 1-2 and repeated in Modules 3-4. Prerequisite: two modules of study in literature taught in any department.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Sultan.

17. CREATIVE WRITING.

Open to students who have taken English 16 and to other students interested in writing verse. Prerequisite: the same as for English 16. Not open to freshmen.
Full course, Modules 3-4. Mr. Sultan.

18. EXPOSITORY WRITING.

This course is designed to improve the student's skill in expository writing. Heavy emphasis is placed on regular conferences with individual students. Although the course is offered by the English Department, topics for papers are not restricted to literature. Expository writing implies a method of expressing one's views on any chosen subject; consequently, topics are chosen in consultation with the instructor.
Full course, Modules 1-2, 3-4, and 5. Staff.

19. INTERMEDIATE COMPOSITION.

Not offered, 1975-76.

This course is designed to help those who have already acquired competence in expository writing to improve their style and effectiveness through practical experience. Special emphasis will be placed on stylistics, techniques of persuasion and methods of organization through the study of works of established essayists and the close analysis of student papers. Enrollment limited to fifteen students. Offered at the discretion of the department. Prerequisite: English 18 and consent of the instructor.
Full course, Modules 3-4. Mr. Blinderman.

25. WRITING FOR MAGAZINES.

The course will analyze the writing styles of different magazines (popular, trade, technical, etc.) and will help students develop appropriate styles for submission of stories and expository articles to these magazines. Offered at the discretion of the department. Prerequisite: permission of the instructor. Enrollment limited to 15.
Full course, Modules 3-4. Mr. Blinderman.

88. DIRECTED READINGS.*

Variable credit.
Modules 1-2-3-4-5. Staff.

89. DIRECTED WRITING.

Prerequisite: consent of the instructor and of the Chairman of the Department.
Variable credit.
Modules 1-2-3-4-5. Staff.

90. SPECIAL PROJECTS.*

Variable credit.
Modules 1-2-3-4-5. Staff.

*Note: When asking an instructor to sponsor DIRECTED READINGS (88) or a SPECIAL PROJECT (90), the student: 1) must be able to satisfy the instructor at the time of Registration that he is competent to deal with the agreed-upon materials primarily as works of literature, and 2) must present a well-thought-out proposal. The student must himself have taken the initiative in conceptualizing the principles on which he will select Readings or carry out a Special Project, and he must have demonstrated competence in determining specific selections and procedures.

111. AMERICAN LITERATURE.

Through study of representative masterworks, the course traces the main currents of American literature from Puritan times to the present. Authors read during Modules 1-2 include Sewall, Edwards, Franklin, Cooper, Poe, Hawthorne, Thoreau, Emerson and Melville; during Modules 3-4, Whitman, Twain, Howells, Dickinson, Adams, Crane, James, Frost, Eliot, Faulkner and Hemingway.
Full course, Modules 1-2. Mr. Elliot.
Full course, Modules 3-4. Mr. Beard.

115. WOMEN IN LITERATURE: THROUGH FORTUNE AND MEN'S EYES.

The purpose of this course is to analyze how women have been explained, perceived, created and presented by men through the centuries. Our readings begin with the Greeks, take us through the Bible, Chaucer, Shakespeare, into the novels of Defoe, James, Tolstoi; we will conclude by comparing the image of woman in some Romantic poems with woman as contemporary women now perceive her. Offered at the discretion of the department.
Full course, Modules 1-2. Ms. Lilienfeld.

116. WOMEN WRITERS OF THE TWENTIETH CENTURY.

The selection of authors and works is based on three major concerns: that the literature read represent a chronological span, preserve a certain thematic coherence and allow ample opportunity for discussion of aesthetic matters. The course is concerned with works written between 1892 and 1973 which provide portraits of women in all stages and conditions of life rendered in a broad spectrum of fictional techniques. Authors studied include

ate Chopin, Gertrude Stein, Djuna Barnes, Katherine nne Porter and Doris Lessing. Offered at the discretion f the department.
ull course, Modules 3-4. Ms. Hilsinger.

20. LITERATURE AND LIBERATION.
Not offered, 1975-76.

his course will study the way literature reflects and etermines the position of women in societies from ncient Greece to modern suburbia. Offered at the iscretion of the department.
ull course, Modules 3-4. Mr. Blinderman.

25. THE SHORT STORY.

his course involves the intensive reading of a wide range f stories which exemplify a variety of fictional methods, ffording the student some knowledge of the history of his literary type. The primary aim is to help the student levelop an appreciation of the broadly human values mplicit in the short story. Offered at the discretion of the lepartment.
ull course, Modules 1-2.
ull course, Module 5. Mr. Carter.

129. MODERN DRAMA.

A survey, with special emphasis on several major figures, of drama from Ibsen to the present. Modules 1-2 trace the development of naturalism, the emergence of modern realistic drama and early reactions to realism. Modules 3-4 cover the period from World War II to the present and examine several of the major post-war movements and some of the non-dramatic forms which they have produced.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Abraham.

140. SURVEY OF TWENTIETH-CENTURY BRITISH FICTION.

A survey of British fiction, primarily the novel, but with some shorter fiction, from the beginning of the twentieth century to the post-war period in the fifties; the focus is primarily upon the work itself rather than upon biographical or historical surroundings. Texts will include: Conrad, *Lord Jim, Heart of Darkness*, and *The Secret Sharer;* Forster, *Howard's End;* Lawrence, *Women in Love;* Ford, *The Good Soldier;* Joyce, *Dubliners;* Woolf, *To the Lighthouse;* Waugh, *Decline and Fall* and *A Handful of Dust;* Cary, *The Horse's Mouth;* Greene, *Heart of the Matter;* Golding, *Free Fall;* Braine, *Room at the Top;* Sillitoe, *The Loneliness of the Long Distance-Runner.* A useful background course for students planning to elect Ms. Hilsinger's Eng. 143: Modern British Fiction. Offered at the discretion of the department.
Full course, Modules 1-2. Mr. Mayer.

143. MODERN BRITISH FICTION.

The course deals primarily with the work of five twentieth-century British writers of fiction: Joyce, Lawrence, Woolf, Forster and Lessing.
Full course, Modules 3-4. Ms. Hilsinger.

144. MODERN AMERICAN FICTION.

A critical introduction to the best American fiction from about 1900 to 1960, with emphasis on its aesthetic values, sociological insights and philosophical implications. Authors read include Dreiser, James, Anderson, Fitzgerald, Hemingway, Capote, Faulkner, Ellison and Mailer.
Full course, Modules 1-2. Mr. Beard.

146. LITERATURE OF THE SIXTIES.

The course will be a survey of contemporary British and American fiction and poetry. Writers to be considered may include Burgess, Hawkes, Golding, Barth, Mailer, Malamud, Bellow, Heller, Vonnegut and representative modern British and American poets.
Full course, Modules 3-4. Mr. Elliott.

161. ADVANCED CREATIVE WRITING.

A course for serious undergraduate literary artists. Admission by consent of the instructor, who will require a sample of the student's work. Enrollment limited to ten. Offered at the discretion of the department.
Half course, Module 5. Mr. Sultan.

200. SEMINAR: OLD NORSE SAGAS.
Not offered, 1975-76.

A study of the major works written during the great flowering of literature in medieval Iceland, with particular emphasis on the Old Norse sagas. All works will be read in translation, but interested students will be given an opportunity to learn Old Norse. Offered at the discretion of the department.
Full course, Modules 3-4. Mr. Anderson.

203. MEDIEVAL LITERATURE.

A study of the literature of Western Europe before 1500. The works read include epics such as *Beowulf, The Song of Roland, The Nibelungenlied* and the *Njal's Saga;* historical writings and folk tales important in the development of the Arthur story; romances such as *Perceval, Tristan and Isolde* and *Gawain and the Green Knight;* Dante's *Divine Comedy; Inferno;* selections from Chaucer's *Canterbury Tales.*
Full course, Modules 1-2. Mr. Anderson.

206. SEMINAR: CHAUCER.

An introduction to Middle English grammar, pronunciation and scansion, and a study of *Troilus and Criseide* and the best of the *Canterbury Tales,* followed by a more rapid reading of at least one of Chaucer's earlier works, such as *The Book of the Duchess, The House of Fame, The Parliament of Fowls* and *The Legend of Good Women.* Prerequisite: consent of the instructor.
Full course, Module 5. Mr. Anderson.

212. SHAKESPEARE.

Approximately twenty plays, with supplementary critical essays, are read through the year as a basis for a study of

Shakespeare's development as a dramatist and his changing attitude toward life. Modules 3 and 4 are devoted mainly to a careful analysis of *Hamlet, Othello, Lear, Macbeth* and *Antony and Cleopatra.*
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Anderson.

216. THE RENAISSANCE IN ENGLAND.

Not offered, 1975-76.

From Thomas More's book on nowhere-at-all (called Utopia) to Shakespeare's witches who argue, in *Macbeth,* that "Fair is foul and foul is fair," to the metaphysical poetry of John Donne, this course will examine equivocation as the mode of thought and response in the sixteenth century, a century torn by the Protestant discoveries of Copernicus; the economic rise of capitalism; the wars with Spain (and the Spanish Armada); and the quiet political revolution — from monarchy to government by Parliament. Offered at the discretion of the department.
Full course, Modules 3-4. Mr. Kinney.

220. SEMINAR: SEVENTEENTH CENTURY.

A study of selected Metaphysical, Cavalier and early Neo-Classical poets (including John Donne, George Herbert, Henry Vaughan, Richard Crashaw, Ben Jonson, Robert Herrick, Andrew Marvell, John Wilmot, Earl of Rochester and John Dryden), and of major writers of seventeenth-century prose (including Sir Francis Bacon, Thomas Hobbes, Izaak Walton, Robert Burton, Sir Thomas Browne, John Evelyn, Samuel Pepys, John Locke and John Dryden). Offered in alternate years. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Carter.

221. INTRODUCTION TO AMERICAN STUDIES: THE AMERICAN IDENTITY.

An exploration of the American identity as reflected in (and created by) literature, film, music, art, politics, landscape and life-style. Modern and contemporary art, fiction, drama and film, as well as social criticism from the 1930's through the 1970's, will be debated in the context of a variety of methodologies. Faculty from several departments will participate.
Full course, Modules 1-2. Mr. Parsons, Mr. Parker.

222. SEMINAR: MILTON.

An intensive reading of Milton's poems and selected prose. Offered in alternate years. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Carter.

224. SEMINAR: THE RADICAL MODE OF RESTORATION COMEDY.

An investigation of the radical aspects of Restoration Comedy, including, among other things, its exclusiveness, its anti-establishment posture and its preoccupation with sexuality and perversion. Parallels will be drawn to some other radical dramatic movements, such as the Theatre of Cruelty and the contemporary Black theatre. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Abraham.

226. SEMINAR: STUDIES IN 18TH CENTURY LITERATURE. *Not offered, 1975-76.*

The first seven weeks will be focused primarily on the Augustans — the poetry of Pope; Swift's poems, essays, and *Gulliver's Travels;* and Gay's *Beggar's Opera.* As these authors tend to be intensely topical and satirical, substantial effort will be made to relate them and their writings to the literature, life and thought of the times. The rest of the term will deal with the Age of Johnson. Although our primary emphasis will be on James Boswell and Samuel Johnson, we will also deal with a number of eighteenth-century poets (to be selected from the following: James Thomson, William Collins, Thomas Gray, Christopher Smart, Oliver Goldsmith, Thomas Chatterton, William Cowper, George Crabbe) and with at least two eighteenth-century dramatists — Goldsmith and Sheridan. The course will be designed flexibly enough to permit students to investigate other contemporary figures in related arts or disciplines (e.g., Bernard Mandeville, David Hume, Edward Gibbon, Sir Joshua Reynolds, Edward Burke). Offered in alternate years. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Carter.

236. BRITISH ROMANTIC LITERATURE.

To define Romanticism, the course will focus on selected writings of English Romantic poets and prose-writers. Relevant works will be studied in depth, but attention will also be paid to biographical, sociological and philosophical contexts. An effort will be made to correlate British Romanticism with other romanticisms — of nineteenth-century America and continental Europe, of earlier times and of the present. Offered in alternate years.
Full course, Modules 3-4. Mr. Blinderman.

238. SEMINAR: WILLIAM BLAKE. *Not offered, 1975-76.*

An analysis of the poems and of a selection of the Prophetic Books of Blake, including some consideration of Blake as graphic artist. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Carter.

239. SEMINAR: AMERICAN LITERARY RENAISSANCE.

Characteristic writings by Emerson, Thoreau, Hawthorne, Poe, Melville and Whitman are juxtaposed dialectically to explore the uniqueness of their individual and collective accomplishments and their larger implications in the context of American culture. Fieldtrip to Concord and possibly elsewhere. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Beard.

242. VICTORIAN LITERATURE. *Not offered, 1975-76.*

A study of Victorian values and major intellectual

novements as expressed in literature. The first semester oncentrates on the idea of Duty (transcendental, tilitarian, Catholic, Darwinian and Dickensian); the econd on the idea of Decadence (from the Pre-aphaelites to Beardsley). Offered in alternate years.
ull course, Modules 1-2.
ull course, Modules 3-4. Mr. Blinderman.

244. SEMINAR: ROMANTIC AND VICTORIAN GOTHIC.

The seminar will call forth the Gothic spirit from its incarnations in architecture, painting and literature — graveyard poetry, Gothic novels, *Frankenstein*. Films and field trip.
Full course, Modules 3-4. Mr. Blinderman.

245. SEMINAR: DARWINISM.

Offered at Holy Cross, 1975-76.

This seminar, of an interdisciplinary nature, is devoted to the study of original and research materials elucidating the scientific, philosophical, religious and social dimensions of Darwinism. The course examines chiefly the survival of the fittest Darwinian ideas in English and American literature. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Blinderman.

249. SEMINAR: TWAIN, HOWELLS AND JAMES.

The course will explore the artistic assumptions and impulses underlying American Realism through selected novels and criticism of America's three greatest realistic novelists. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Elliott.

251. THE CIVIL WAR IN LITERATURE, 1860-1960.

This course will explore and evaluate the effects of the Civil War on selected American authors. The course will include some background on economic, political and historical events related to the Civil War and examine how different authors come to terms with American conditions like slavery, industrialization, the Myth of the South, etc. Offered at the discretion of the department.
Full course, Module 5. Mr. Elliott.

252. SEMINAR: JOSEPH CONRAD.

A study of his work. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Half course, Module 5. Mr. Sultan.

254. SEMINAR: NATURALISM IN AMERICAN FICTION.

A study of naturalism in American fiction and criticism. The course will focus on the writing of Crane, London and Dreiser. Offered at the discretion of the department. Prerequisite: permission of the instructor.
Full course, Modules 3-4. Mr. Elliott.

257. SEMINAR: THE IRISH LITERARY MOVEMENT.

Not offered, 1975-76.

A course in the inception, development and effect of the literary movement during the end of the last century and the first decades of this one that created an Irish literature in English. Writers studied include Yeats, Joyce, Synge and O'Casey. The cultural, historical and political backgrounds of Anglo-Irish literature are also studied. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Sultan.

259. MODERNIST POETRY. *Not offered, 1975-76.*

A survey, with special attention to the genesis and development of modernism and to tendencies during the last few years toward a dominant new movement in English poetry. The works of almost fifty poets, ranging in time from Emily Dickinson to Robert Creeley, are considered. Offered in alternate years.
Full course. Mr. Sultan.

261. SEMINAR: W. B. YEATS.

Intensive study of the accomplishment of Yeats. The principal concern will be his poetry, but attention will be given to his thought, his dramatic and his other writings, and his cultural role in Ireland and the world during his time. Offered at the discretion of the department. Prerequisite: one of the following: Introduction to Poetry, The Irish Literary Movement, T. S. Eliot; also, consent of the instructor.
Full course, Modules 3-4. Mr. Sultan.

264. SEMINAR: T. S. ELIOT.

An intensive study of the major poems, plays and critical essays of T. S. Eliot. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Ms. Hilsinger.

266. SEMINAR: VIRGINIA WOOLF.

Not offered, 1975-76.

An intensive study of Mrs. Woolf's nine novels, her short stories, her major essays and her diary. The course will emphasize the artistic process as well as the vision of Mrs. Woolf's work, and it will consider such collateral issues as Mrs. Woolf's critical stance and her feminism. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Ms. Hilsinger.

267. SEMINAR: SPECIAL STUDIES IN TWENTIETH-CENTURY AMERICAN LITERATURE.

Not offered, 1975-76.

A seminar devoted to the intensive study of a twentieth-century writer or small group of writers — Hemingway and Faulkner in 1974. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Beard.

268. SEMINAR: EUGENE O'NEILL.

Intensive study of about twenty of O'Neill's plays, from the early one-acters to *The Iceman Cometh, Long Day's Journey into Night* and *A Moon for the Misbegotten,* with some attention to ideas, persons and theatrical movements affecting O'Neill. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Beard.

273. SEMINAR: F. SCOTT FITZGERALD AND THE TWENTIES.

Using Fitzgerald's life and writings as a convenient and indicative matrix, the course will explore the Twenties as a period rich in avant garde creativity, significantly assessing and re-defining traditional literary values and forms. Writers other than Fitzgerald to be considered include Gertrude Stein, Sherwood Anderson, Ernest Hemingway, Sinclair Lewis, William Faulkner, H. L. Mencken, Ezra Pound, T. S. Eliot, E. E. Cummings, William Carlos Williams, Wallace Stevens and Eugene O'Neill. Some attention will be given to Jazz and its chief classical proponent George Gershwin, and to prominent artists from the popular John Held, Jr. to Picasso. Magazines such as the *The Smart Set* and *The Dial* will be examined and a visit to the great Dial Collection at the Worcester Art Museum scheduled. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Full course, Module 5. Mr. Beard.

275. MODERN SCANDINAVIAN LITERATURE.

After a study of a few mid-nineteenth century works marking the end of the Romantic view and the beginnings of the realistic approach to social problems and the psychological study of character, the course will focus on Danish, Icelandic, Norwegian and Swedish fiction and drama of the last fifty years. Except for Ibsen and Strindberg, most of the authors are relatively little known to American readers — writers like Sigrid Undset, Halldorr Laxness, Par Lagerkvist, Isak Dinesen, Ingmar Bergman; but all the works studied are of high literary value, three of them Nobel Prize winners. Offered at the discretion of the department.
Full course, Modules 3-4. Mr. Anderson.

278. SPECIAL STUDIES IN TWENTIETH-CENTURY LITERATURE.

Tutorial with individual students who will evolve and develop their own projects in English literature or comparative literature (English and French, Spanish, German or English and more than one of the others). Projects need not be critical papers. Translation, studies in the sociology of literature, the editing of private papers and other projects may be undertaken. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Half course, Module 5. Mr. Sultan.

282. INSTRUCTION AND CURRICULUM DEVELOPMENT AT THE SECONDARY LEVEL.

Refer to course description under Education 282.
Half course, Module 1.

282.1. INSTRUCTION AND CURRICULUM DEVELOPMENT IN ENGLISH.

Refer to course description under Education 282.1.
Half course, Module 2.

291. SEMINAR: THE CONCEPT OF TRAGEDY.

Through the study of approximately twenty plays, three novels and a number of poems, from the Greek and Hebrew origins of Western Culture to the present time, this course analyzes the nature of Tragedy, the changes which this concept has undergone, the relation of these changes to shifting views of man and the universe and the significance of the study of tragedy to us today. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Anderson.

292. THE PROTESTING VOICE AND THE INDIGNANT EYE: SATIRE IN LITERATURE AND THE VISUAL ARTS.

A survey of the range and vitality of the genre of SATIRE in *literature* from Aristophanes to the present and in the *visual arts* from the fifteenth century to Picasso. Offered at the discretion of the department. Prerequisite: English 10 or at least two modules of study in literature taught in any department.
Full course, Modules 3-4. Mr. Carter.

294. MATERIALS AND METHODS IN TEACHING SECONDARY ENGLISH.

Review and application of specific materials and techniques in the teaching of composition and poetry. A seminar involving student interns, specialists and experienced teachers.
Full course, Modules 3-4. Staff.

295. TEACHING ENGLISH AS A SECOND LANGUAGE.

This course covers the principles and practice of second language teaching, with emphasis on the application of modern linguistics to the teaching of English as a second language. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Macris.

296. THE LITERATURE OF DECADENCE.

Readings will include Sade, Gautier, Balzac, Poe, Baudelaire, Mallarmé, Huysmans, Pater, Wilde and Beardsley; as well as some contemporary writers: Borges, Kosinski, Barthelme and Calvino. The course (while designedly heuristic) will develop a theory of a "decadent" aesthetic, epistemology and social ethic; and it will provide a multi-focal, inter-disciplinary context in which to view emergent 19th and current 20th century sensibilities. While examining both dominant and

unter-cultural movements, the Decadence course will mphasize life and literary styles as indices to cultural xpression and self-definition. A high degree of student articipation will be expected.
ull course, Modules 3-4. Mr. Parsons.

97. DRAMA AND THE MIND'S EYE.

n experimental methods course in developing an nderstanding of the relationship between the theatrical .e., production) and literary dimensions of a play.
ull course, Module 5. Mr. Abraham.

98. SEMINAR: THE MYTHOPOETIC MODE.

his seminar explores the vision and epistemology of ythopoetic literature. Works read and discussed include hakespeare's *Henriad,* Milton's *Paradise Lost,* Brontë's *uthering Heights,* Melville's *Moby Dick* and a work of the odern Period. Candidates for honors in English should lect this seminar in their junior year. Prerequisite: onsent of the instructor.
ull course, Modules 3-4. Ms. Hilsinger.

99. HONORS IN ENGLISH: SENIOR YEAR.

ull course. Staff.

00. INTRODUCTION TO LITERARY STUDIES.

his course studies the three principal areas in the iscipline — bibliography and textual analysis, literary istory and literary criticism — and the relationships mong them. In the study of literary criticism, alternative heoretical approaches and applications of them are xamined. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Sultan.

349. THESIS WORKSHOP.

This seminar involves the *doing* — though not necessarily the completion — of a scholarly-critical project in literature on a professional level. The entire process from initial formulation to final presentation will be considered in the context of the specific individual projects of students in the group. A prerequisite is active commitment to and involvement in such a project. While intended primarily for graduate students in English, undergraduates with appropriate projects — honors theses, for example — from English and allied disciplines may be accepted by permission.
Full course, Modules 3-4. Mr. Beard.

350. MASTER'S THESIS.

Prerequisite: consent of Chairman or Director of Graduate Studies.
Full course. Staff.

351. READING COURSE FOR MASTER'S THESIS.

Normally, only students writing theses in linguistics may take English 351. Prerequisite: consent of Chairman or Director of Graduate Studies.
Full course. Staff.

388. GRADUATE DIRECTED READINGS.

May be elected to pursue in depth a topic other than that chosen for the Master's thesis. Prerequisite: consent of the instructor and of the Chairman or the Director of Graduate Studies.
Variable credit. Staff.

COMPARATIVE LITERATURE

A student may count any of the courses listed under "Comparative Literature" (see under Department of Foreign Languages and Literatures) toward the English major. In all cases, such electives must be approved by the student's advisor in the English Department as being meaningfully related to the student's overall program of English studies. Two options which seem especially relevant:

Comp. Lit. 118. LITERATURE AND THE NATURE OF MAN.

Refer to course description under Department of Foreign Languages and Literatures.
Mr. King, Mr. Anderson.

Comp. Lit. 190. CRITICAL APPROACHES TO LITERATURE.

Refer to course description under Department of Foreign Languages and Literatures.
Mr. Hughes.

LINGUISTICS

Linguistics 115. MAN AND LANGUAGE.

Refer to course description under Linguistics.
Mr. Reid.

Linguistics 260. LINGUISTICS AND LANGUAGE LEARNING.

Refer to course description under Linguistics.
Mr. Reid.

English 280. HISTORY OF THE ENGLISH LANGUAGE.

Modules 1 and 2 deal with the development of the phonology and lexicon of English, viewed as a dynamic series of systems. The course also describes the homeland, language and culture of the Proto-Indo-Europeans as background for a treatment of the structural relationships between English and other languages of the Indo-European family. Modules 3 and 4 concentrate on the development of the grammar of English, also treated dynamically and systemically. The course includes an analysis of the establishment of Standard British English, the doctrine of correctness, and the growth of Modern American English in its sociocultural setting. Prerequisite: consent of the instructor. Only the first half of this course will be offered in 1974-75.
Full course, Modules 1-2. Mr. Macris.

English 282. SEMINAR: OLD ENGLISH.
Not offered, 1975-76.

An introduction to Old English language and literature. The works read include King Alfred's preface to Pope Gregory's *Pastoral Care* and selections from the West Saxon Gospels, from the Old English translation of the Heptateuch, from Aelfric's *Colloquy*, from the Anglo-Saxon Chronicle, and from the Old English translation of Bede's *Historia Ecclesiastica Gentis Anglorum*. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Macris.

English 284. SEMINAR: MODERN AMERICAN ENGLISH.
Not offered, 1975-76.

This seminar analyzes the grammatical structure of Modern American English. It concentrates on an evaluation system for handling spoken and written English and the application of this system to problems of current English usage. The relevance of linguistic theory and methodology of the teaching of English receives special attention. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Macris.

Linguistics 285. SEMANTICS. *Not offered, 1975-76.*

Refer to course description under Linguistics.
Mr. Macris.

English 286. SEMINAR: LINGUISTIC APPROACHES TO LITERATURE. *Not offered, 1974-75.*

A study of what modern linguistics has to offer in the analysis and criticism of literature, with special attention to the contributions of the generative-transformational, tagmemic, and parametric approaches. Offered at the discretion of the department. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Macris.

Linguistics 287. INTRODUCTION TO LINGUISTICS.
Not offered, 1975-76.

Refer to course description under Linguistics.
Mr. Macris.

Linguistics 288. COMPARATIVE AND HISTORICAL LINGUISTICS. *Not offered, 1975-76.*

Refer to course description under Linguistics.
Mr. Macris.

THEATRE ART

The following courses in Theatre Art may be taken for credit toward the English major:

Theatre Art 10. INTRODUCTION TO DRAMA.

Refer to course description under Theatre Art.
Mr. Schroeder.

Theatre Art 168. BRECHT AND THE EPIC THEATRE.
Not offered, 1975-76.

Refer to course description under Theatre Art.
Mr. Raviv.

Theatre Art 182. MODERN DRAMA: DEPARTURES FROM REALISM. *Not offered, 1975-76.*

Refer to course description under Theatre Art.
Mr. Raviv.

Theatre Art 183. THE THEATRE AS A VEHICLE FOR PROTEST AND PROPAGANDA IN TIMES OF SOCIAL CHANGE. *Not offered, 1975-76.*

Refer to course description under Theatre Art.
Mr. Raviv.

Theatre Art 184. THE GOLDEN AGE OF YIDDISH THEATRE. *Not offered, 1975-76.*

Refer to course description under Theatre Art.
Mr. Schroeder.

Theatre Art 185. TENNESSEE WILLIAMS.

Refer to course description under Theatre Art.
Mr. Schroeder.

Theatre Art 281. SEMINAR: SPECIAL STUDIES IN RENAISSANCE DRAMA. *Not offered, 1975-76.*

Refer to course description under Theatre Art.
Mr. Schroeder.

Theatre Art 286. SEMINAR: IBSEN.

Refer to course description under Theatre Art.
Mr. Schroeder.

Environmental Affairs

PARTICIPATING FACULTY

Harry E. Schwarz, B.C.E., Program Director, Visiting Professor of Environmental Affairs and Adjunct in Geography
Leonard Berry, Ph.D., Professor of Geography, Co-director International Development and Social Change Program, Dean of the Graduate School, Coordinator o Research
Saul B. Cohen, Ph.D., Professor of Geography, Director, Graduate School of Geography and Adjunct Professor of Government and International Relations
Robert W. Kates, Ph.D., University Professor (Geography)
Michael McClintock, Ph.D., Visiting Professor of Physics

John Reynolds, Ph.D., Professor of Microbiology
Seymour Wapner, Ph.D., G. Stanley Hall Professor of Genetic Psychology, Chairman, Department of Psychology
Christoph Hohenemser, Ph.D., Associate Professor of Physics
Roger E. Kasperson, Ph.D., Associate Professor of Government and Geography
Laurence A. Lewis, Ph.D., Associate Professor of Geography
Frank Puffer, Ph.D., Associate Professor of Economics, Dean of Academic Affairs
Stephen L. Feldman, M.A., Assistant Professor of Geography
Richard Howard, Ph.D., Assistant Professor of Geography, Adjunct in Biology
Alan A. Jones, Ph.D., Assistant Professor of Chemistry

PROGRAM

This program was developed in response to the challenge of the period of change which is being experienced in relations between people and their environment. New relations require new concepts and reevaluated views of existing ones. Thus, a new field of professional endeavor is evolving to deal with people and their environment. The purpose of this program is to train students for entry-level professional positions in the expanding fields of environmental planning, management and education. The terminal point of the program is the attainment of the degree of Master of Arts in Environmental Affairs. The baccalaureate degree is incidental to the program, serving as the proof of attainment in a traditional discipline.

Within the program, concentrations are offered in environmental planning on the regional or urban level for land, water and air, in environmental monitoring and environmental education. The program is flexible in order to accommodate changes in the field and to remain relevant in this dynamic world.

The Environmental Affairs Program offers a student substantative knowledge in an academic discipline, a group of undergraduate courses covering the concepts and tools necessary for working on environmental problems, an internship in an environmental agency and a one-year graduate program involving advanced courses in specialized areas, seminars and a practicum in which the student develops a terminal project or thesis. Both academic and practical experiences make up the Environmental Affairs program of study.

A central feature of the program is the relationship between the student and advisor. By limiting the number of students admitted, close advisor-student relationships are maintained. In this way, the program can be tailored to the individual student's needs through the selection of undergraduate courses which develop a student's disciplinary training while providing a strong foundation on environmental issues.

Where listed courses at Clark do not meet a student's full needs, consortium courses, special research projects and directed readings provide the necessary additional training. A full summer internship normally takes place immediately after completion of the baccalaureate degree and before the commencement of graduate work, but the modular calendar permits the internship at other periods such as during the senior year or within the graduate-training span. In the two-year undergraduate part of the program students are expected to take courses in a chosen discipline and environmental program oriented courses to complete their baccalaureate requirements. Ten courses are required during graduate study.

ADMISSION

Because the program is a three year combined B.A./M.A. program, students normally are admitted at the beginning of their junior year. A small number of graduate students can be admitted to the program if their admission adds to the student body a range of backgrounds not available from within. However, those entering the program with a bachelor's degree normally require two years of study to complete the necessary course work.

In order to maintain a close student-faculty relationship, admission to the program is limited to approximately 15 students per year. Selection of persons for admission is based upon an evaluation of the applicant's previous academic record and work experience, plus a personal interview with the admissions committee. In those cases where the interview requirement would impose an extreme hardship upon the applicant, a mutually satisfactory alternative may be possible.

Students applying for admission at the junior level are expected to have a cumulative average of about B- or higher, have satisfactorily completed at least four courses in the sciences of which at least one each should be in biology and the physical and social sciences. Individual exceptions are possible if competence can be demonstrated in an alternative way. Seniors may be accepted on an individual basis with additional requirements based on the program objective and past experience of the student. Deficiencies may be made up by summer courses prior to entering the program or for one course only by concurrent registration in the junior year.

Since admission to the program is highly restricted, interested students are urged to write as early as possible to the program director for a determination of their eligibility.

UNDERGRADUATE PROGRAM

The undergraduate portion of the Environmental Affairs Program emphasizes the acquisition of the tools and concepts students need as a base from which to develop their knowledge and skills in environmental affairs. Two options are available to students in their undergraduate years. One, the preferred, is to satisfy a departmental major and an environmental minor and so receive a Bachelor of Arts in a traditional discipline. The other is to receive a Bachelor of Arts with a concentration in Environmental Affairs and in a related field such as Biology, Chemistry, Geography, Government, Management, Psychology, Sociology or Science, Technology and Society. The specific requirements for each of these options are:

Option 1

(Leading to a Bachelor of Arts degree in any discipline with an environmental minor).

Fulfillment of requirements of the major in an established discipline and 5 course credits in Environmental Affairs:

Number	Title	Credit
EA 201	Applications of Systems Analysis to Environmental Problems	1/2
EA 202	The Biosphere	1/2
EA 203	Man's Perception of His Environment	1/2
EA 204	Environmental Plans and Programs	1/2
EA 250	Practical Problems in Environmental Affairs	2
EA 206	Research in Environmental Affairs	var.

Individual course substitutions may be made with the approval of the program director. During the senior year, students must take at least 2 courses accepted on the graduate level.

Option 2:

(Leading to a Bachelor of Arts degree with concentration in Environmental Affairs).

A program jointly designed by the student and the program director with approval of the Graduate Board. This program must include E.A. 201, 202, 203, 204 (4-1/2 courses), E.A. 250 (one double strength course); 2 other E.A. courses, 8 course credits in one field such as Biology, Chemistry, Geography, Government, Management, Psychology, Sociology or Science, Technology and Society that provide basic skills or are related to environmental problems and 2 courses in fields other than the area of concentration that are related to the environment. Individual course substitutions may be made with the approval of the program director. During the senior year, students must take at least 2 courses acceptable on the graduate level.

GRADUATE PROGRAM

Admission: Students that have been enrolled in the program as undergraduates will continue in the graduate phase if they meet the standards of the Graduate School and pass a review of their progress by the Environmental Affairs Program Admiusions Committee. Students entering the program with a bachelor's degree are accepted only if the Environmental Affairs Admission Committee determines that the student is not only capable of doing the work, but also that the student's admission will further the goals of the program.

Internship: An internship in an agency or firm of at least 2 months duration in which the intern works on an environmental problem is required. This internship will normally be accomplished during the summer following the baccalaureate. Students will be assigned to internships or can find a position by themselves if such a position is approved by the director of the program.

Coursework: A course program of 10 courses is required, 8 courses if the student took 2 courses acceptable at graduate level in the senior year. This cours program will be agreed upon jointly by the student and advisor and will be directed towards a specific focus, such as water or air pollution, planning, monitoring or any othe specific topic. The last course should be E.A. 330, Environmental Affairs Practicum (a double course) in which students prepare master's projects. Students entering the program at the graduate level are required to take additional courses as needed to fill gaps in their undergraduate preparation.

Master's Project: This can be a terminal project, i.e. the solution to a specific problem or a thesis on a research topic. In either case, it must relate to the students' specific course focus, and its topic and outline must be approved by the director of the program.

Financial Aid: Several tuition remission scholarships are available for qualified applicants.

Science, Technology and Society 101 and 102. CASE STUDIES.

Refer to course description under Science, Technology and Society.

Chemistry 142. ENVIRONMENTAL CHEMISTRY.

Refer to course description under Chemistry.
Full course, Modules 1-2. Mr. Jones.

Geography 150. AQUARIUS: PLANNING FOR URBAN WATER RESOURCES.

Refer to course description under Geography.
Full course, Modules 3-4. Staff.

Geography 157. SPATIAL ASPECTS OF RESOURCE UTILIZATION.

Refer to course description under Geography.
Full course, Modules 1-2. Mr. Feldman.

Geology 171. ENVIRONMENTAL GEOLOGY.

Refer to course description under Geology.
Full course, Modules 3-4. Mr. Lewis.

Geography 191. INTRODUCTION TO MAP MAKING AND CARTOGRAPHY.

Refer to course description under Geography.
Full course, Modules 1-2. Mr. Chang.

201. APPLICATION OF SYSTEMS ANALYSES TO ENVIRONMENTAL PROBLEMS.

This course will discuss the fundamental concepts of

systems analyses and their application to environmental problems. Stress will be on the use, applicability and limitations of this method in analyzing complex environmental systems and their physical, social and economic aspects. Prerequisite: admission to environmental affairs program or instructor's consent.
Half course, Module 1. Mr. Schwarz.

202. THE BIOSPHERE.

Building on a foundation of general knowledge of physiology, genetics, taxonomy and ecology. The course will provide a biological context and perspective for the analyses and assessment of man-made environmental hazards. Prerequisite: introductory course in biological science or concurrent registration in such course with instructor's consent.
Half course, Module 2. Mr. Reynolds.

203. MAN'S PERCEPTION OF HIS ENVIRONMENT.

An introduction to the study of environmental behavior. Examining man's reactions to environmental changes and natural and man-made hazards.
Half course, Module 3. Staff.

204. ENVIRONMENTAL PLANS AND PROGRAMS.

An overview of the planning process with special emphasis on plans and programs in the New England region. Plans and programs now current are examined and their logic and history discussed.
Half course, Module 4. Mr. Schwarz.

205. READINGS IN ENVIRONMENTAL AFFAIRS.

Directed readings for undergraduates in an area of their choice. Consent of instructor required.
Variable credit.
Modules 1-2-3-4-5. Staff.

206. RESEARCH IN ENVIRONMENTAL AFFAIRS.

Special research projects for undergraduates in an area of their choice. Consent of instructor required.
Variable credit.
Modules 1-2-3-4-5. Staff.

210. ENVIRONMENTAL PROTECTION.

A free-wheeling discussion of pollution control in the real world, its legal, institutional and political framework. Federal, state and local laws and their scientific basis; agency practice and procedure; public litigation and private "citizen suits"; selecting theories and remedies, both civil and criminal; tactics and strategies; citizen "watchdog" groups; corporate and media responsibility; economy versus ecology; old tools, new tools, potential for change. Reading in multilithed materials with statutes, regulations, court documents, case decisions, news accounts and journal articles. Informal student advocacy panels to assure balanced presentation of issues.
Full course, Modules 3-4. Staff.

211. WATER REUSE AND THE AMERICAN CITY.

A research seminar designed to analyze current and future prospects for the use of renovated wastewater as a source of municipal water supply. Major issues relating to water purification technology, impact upon public health, drinking water standards, economic feasibility, public acceptance and managerial attitudes will be explored. The adoptions of water reuse systems in the U.S. and elsewhere will be evaluated. Attention will also be given to current developmental programs in federal governmental agencies. Finally, various alternatives in system design will be examined. Limited to 10 students. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Kasperson, Mr. Reynolds,
Mr. Schwartz.

Geography 247. QUANTITATIVE METHODS IN GEOGRAPHY.

Refer to course description under Geography.
Full course, Modules 3-4. Mr. Chang.

250. PRACTICAL PROBLEMS IN ENVIRONMENTAL AFFAIRS.

This is a work-study course. The student will work four full (eight-hour) days in an environmental agency in the Worcester-Boston area or spend equivalent time on a project at the university. Also, weekly seminars at the university will review and evaluate work experiences. Grades will be awarded on the basis of the student's accomplishment in internship posts and seminars. Does not substitute for required program internship.
Prerequisite: consent of the instructor.
Double course, Module 5. Staff.

Geography 257. SPATIAL ASPECTS OF RESOURCE UTILIZATION.

Refer to course description under Geography.
Full course, Modules 3-4. Mr. Feldman.

Geography 260. POLITICS OF ENVIRONMENTAL MANAGEMENT.

Refer to course description under Geography.
Full course, Modules 3-4. Mr. Kasperson.

Geography 275. CITIZEN PARTICIPATION.

Refer to course description under Geography.
Full course, Modules 1-2. Mr. Kasperson.

300. READINGS IN ENVIRONMENTAL AFFAIRS.

Directed reading for graduate students in an area of their choice. Consent of instructor required.
Variable credit.
Modules 1-2-3-4-5. Staff.

301. RESEARCH IN ENVIRONMENTAL AFFAIRS.

Special research projects for graduate students in an area

of their choice. Consent of instructor required.
Variable credit.
Modules 1-2-3-4-5. Staff.

330. PRACTICUM IN ENVIRONMENTAL AFFAIRS.

Individual or small groups of students will be working on real world problems. Emphasis in this studio course will be on practical problem solving.
Double course, Modules 1-2, 3-4. Mr. Schwarz.

Geography 357. REGIONAL WATER RESOURCES PLANNING.

Refer to course description under Geography.
Full course, Modules 3-4. Mr. Schwarz.

Film Studies

(See Department of Visual and Performing Arts.)

Foreign Languages and Literatures

DEPARTMENT FACULTY

Walter Schatzberg, Ph.D., Professor of German, Department Chairman
Raymond E. Barbera, Ph.D., Professor of Romance Languages
J. Richard Reid, Ph.D., Professor of Romance Languages
Marvin A. D'Lugo, Ph.D., Associate Professor of Spanish
Kenneth Hughes, Ph.D., Associate Professor of German
Hartmut Kaiser, Ph.D., Associate Professor of German
J. Fannin King, M.A., Associate Professor of Romance Languages
Michael K. Spingler, Ph.D., Associate Professor of French
Dorothy Kaufmann McCall, Ph.D., Assistant Professor of French
Carol D'Lugo, M.A., Lecturer in Spanish
Irene Kriskijans, M.A., Lecturer in Russian
Gale H. Nigrosh, M.A.T., Lecturer in French
Lieselotte Overvold, M.A., Lecturer in German
Catherine Q. Spingler, M.A., Lecturer in French
Lori R. Toepel, Ph.D., Visiting Assistant Professor of Classics

AFFILIATED FACULTY IN JEWISH STUDIES

William E. Kaufman, Ph.D., Lecturer in Jewish Studies
Joseph Klein, D.D., Lecturer in Biblical Literature
Harold S. Kushner, Ph.D., Lecturer in Jewish Studies
Miriam Raviv, B.A., Lecturer in Hebrew

PROFESSORS EMERETI IN RESIDENCE

Karl J.R. Arndt, Ph.D., Professor of German, Emeritus
Claude W. Barlow, Ph.D., Professor of Classics, Emeritus

UNDERGRADUATE PROGRAM

The Major in Foreign Languages and Literatures

The major in foreign languages and literatures concentrates particularly on the way in which nations may express the consciousness of their culture through literature and other arts. The interdisciplinary and humanistic spirit of the program encourages the student to relate studies in literature to other areas of the humanities and social sciences such as history, philosophy, fine arts, geography, psychology and sociology in order to arrive at an understanding of the cultural traditions of other nations.

Requirements

1) No fewer than eight courses beyond the intermediate level in one or more foreign languages.

2) A number of related courses varying from five to eight, depending on the student's range of interests, are to be selected by the student in consultation with his faculty advisor.

3) If the major program is concentrated in one language, a reading knowledge of a second language is recommended.

4) At least one course in linguistics is recommended.

The Major in Comparative Literature

The major in Comparative Literature is intended for the student inclined toward studies in the field of foreign literatures, but whose interest lies beyond the scope of any one national literature, period or genre. The major will afford this student the opportunity of combining related trends, movements and other literary developments into a program which in turn reflects the broadest possible frame in which to pursue his study of literature.

Requirements

1) No fewer than six courses taken beyond the intermediate level in one or more foreign languages. (An intermediate level course in a second foreign language may be used in certain cases towards the fulfillment of the language course requirement.)

2) Suggested sequence of core courses in Comparative Literature:

a) Ideally, the student should have taken Critical Approaches to Literature (C.L. 190) by the end of the sophomore year, although this recommendation does not preclude taking it at a later time.

b) By the end of the junior year, the student should have completed at least two of the following genre courses: Elements of Drama (C.L. 230), Elements of Narrative (C.L. 240) or Elements of Poetry (English 13). Again, in certain cases, the sequence of courses might be altered according to the particular direction of studies determined by the student and the advisor.

c) While a student may wish to devote his senior year to a number of tutorials, autonomous projects and related courses, those students interested in advanced study of literary theory are encouraged to take the Seminar on Literary Theory and Practice (C.L. 251).

3) A number of related courses varying from four to six, depending on the student's range of interests, are to be selected by the student in consultation with his faculty advisor.

The Advisory System

Since the department believes that individual courses will assume their relevance only in the context of a total program which will have sufficient flexibility to take the student's intellectual biography into account, it emphasizes strongly the close association between student and faculty advisors. The basic role of the advisor is to work closely with the student to insure that the program developed between them will enhance and reflect the student's scholarly growth.

Although all members of the department serve as faculty advisors, the following have been designated as advisors in the major areas of concentration offered by the department:

Comparative Literature: Mr. Schatzberg
French: Mr. Spingler
German: Mr. Kaiser
Spanish: Mr. D'Lugo

Students are encouraged to develop a foreign languages program involving two or more languages. To discuss this possibility as well as to plan career goals and options contact Mr. Schatzberg.

Study Abroad

Students of foreign languages and literatures may study abroad either for a summer, one semester or an entire year. Through the university's affiliation with the Institute of European Studies, campuses in Vienna, Freiburg, Paris, Nantes, Madrid, Durham, and London are readily accessible to Clark students. For further information and to explore possibilities contact Mr. Schatzberg.

Study in Mexico

Through affiliations with the State University of Guadalajara and the Instituto Cultural Mexicano-Norteamericano (ICMN) Clark offers qualified students the opportunity to live and study for either one module or a full semester in Mexico. In both programs, students are housed with select Mexican families and pursue courses of study in diverse fields including: Spanish language, Mexican history, culture, anthropology, archaeology, literature and art history.

A) *Fifth Module at the Instituto Cultural Mexicano-Norteamericano (ICMN)*

A two-part modular program offering the student a one-week orientation period at Clark with mini-seminars in language, culture, history and literature of Mexico. The second part of the program will be a 5-week residency in Guadalajara, Mexico's second largest city and center of diverse cultural and historical importance where students will take one or two units of intensive study. Activities include optional side trips to nearby sites of interest. Application due no later than the beginning of Module 3. See Professor D'Lugo.

B) *State University of Jalisco in Guadalajara. Semester Program.*

A unique one-semester/or full-year study program. Students will be housed with select Mexican families and pursue a full academic program in the Faculty of Philosophy and Letters of the State University. All courses taught in Spanish. Full integration of the student into campus life. All courses will be taught by Mexican faculty and are attended by Mexican students, with some qualified foreign students. High proficiency in Spanish required. Prerequisite for application to the semester program is successful completion of the ICMN module in Guadalajara or sufficient prior experience living in a Spanish-speaking country. Deadline for application: the beginning of the semester prior to attendance at the University. Course offerings in history, literature, archaeology, art history, etc. See Professor D'Lugo.

Language Dormitories

French and Spanish quads with native speakers in residence are available in the Carriage House. Interested students should notify the department secretary.

UNDERGRADUATE-GRADUATE PROGRAM: THE B.A.-M.A. PROGRAM IN COMPARATIVE LITERATURE.

The B.A.-M.A. Program in Comparative Literature is a course of studies integrating the last two undergraduate years with the first year of graduate work. It permits and requires a careful planning and coordination of course work, independent study and research, and the preparation of a master's thesis over a three year period beginning with the junior year. The program, which is described in greater detail elsewhere in this *Bulletin*, is currently in its third year of operation. It involves as many as ten faculty members and 20 to 25 students who have a demonstrated interest in literature and literary criticism. For further information concerning the program's admission standards, requirements, methodology and goals contact Mr. Barbera or Mr. Schatzberg.

DEPARTMENT COURSES

A. **Classics**
B. **Comparative Literature**
C. **French**
D. **German**
E. **Hebrew**
F. **Russian**
G. **Spanish**
H. **Linguistics**

A. CLASSICS

Classics 120. INTRODUCTION TO GREEK AND ROMAN LITERATURE.

A study of the most characteristic works of selected Greek and Roman authors such as Homer, the Lyric Poets, the Tragedians, Aristophanes, Vergil, Cicero, Ovid, the Elegiac Poets, Juvenal. We will follow certain themes through ancient literature, in most cases reading complete works, and consider these works in relation to their times and culture.
Full course, Modules 1-2. Ms. Toepel.

Classics 124. GREEK MYTHOLOGY AND RELIGION.

A study of mythology and religion and its place in the psyche and society of the ancient Greeks. Emphasis will be placed on the psychological and cultural origins of myth, the search for immortality through orgiastic and hero cults, the influence of myth on art, literature and later cultures.
Full course, Modules 1-2. Ms. Toepel.

Classics 135. GREEK DRAMA: TRAGEDY AND COMEDY.

Not offered, 1975-76.

Analyses of selected tragedies and comedies of Aeschylus, Sophocles, Euripedes and Aristophanes with an emphasis on the nature, purpose and origins of tragedy and comedy; the religious and moral problems posed; play production in the ancient theater.
Full course. Ms. Toepel.

Classics 140. GREEK AND ROMAN EPIC AND ROMANCE.

Not offered, 1975-76.

True nature and evolution of the epic from the oral improvisation of Homer to the elaborate composition of Vergil and of the Greek and Roman prose narratives, the "proto-novels," such as the *Satyricon,* the *Golden Ass* and the *Romance of Daphnis and Chloe.*
Ms. Toepel.

Classics 150. THE IDEA OF HISTORY IN THE ANCIENT WORLD.

A study of the literary sources for the ancient civilizations of Egypt, the Middle East, Greece and Rome covering the types of literary sources available for each period and place, the aims and methods of the major historians such as Herodotus and Livy, comparison of authors dealing with the same events, and the nature of the supplementary material.
Full course, Modules 3-4. Ms. Toepel.

B. COMPARATIVE LITERATURE

Comparative Literature 100. FRESHMAN SEMINAR. "MIRROR AND MAP: PERSONAL GEOGRAPHIES IN THE PHYSICAL WORLD."

Readings and discussions to explore the problems of personal placement for reader and character in fiction. The struggle by each to structure the chaos of the physical world into meaningful orders. The influence of a print-oriented world on the reader's mind, the impact of geographic notions on the world we see before us. Close examination of some unique spatial orders in fiction: the city, the labyrinth, the jungle. Ways of navigating through the spaces of fiction. This seminar is part of a cluster course called "Concepts in Space."
Full course, Modules 1-2. Mr. D'Lugo.

Comparative Literature 105. FRESHMAN SEMINAR. "MASK AND MIND: THE ACTOR'S AND THE SPECTATOR'S EXPERIENCE OF SPACE IN THE THEATRE."

The seminar and theatre workshop will explore the problem of theatrical space as experienced by the actor (o character) and as perceived by the spectator. These experiences of space will be organized around such splits as stage versus auditorium, the private versus the public and the sacred versus the profane. Readings, discussions and workshops. This seminar is part of a cluster course called "Concepts in Space."
Full course, Modules 1-2. Mr. Spingler.

Comparative Literature 118. LITERATURE AND THE NATURE OF MAN.

Ideas held by outstanding literary artists of the Western World concerning the nature of man and his relation to the universe. The works are also to be studied as representative of the cultures of which they are products. The subject matter discussed includes Sophocles' *Oedipus the King, The Book of Job,* Dante's *Divine Comedy,* Shakespeare's *King Lear,* Milton's *Paradise Lost,* Molière's *Misanthrope,* Goethe's *Faust* and selected poems of T.S. Eliot. All non-English works are read in translation. Admission subject to the consent of the instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. King, Mr. Anderson.

Comparative Literature 150. GREEK MYTHS AND THEMES IN WESTERN LITERATURE.

Graeco-Roman myths and themes have provided a basis for many works of western literature. This course will cover various authors in several time periods who have used the myths of Pandora, Ulysses; the themes of return to nature, the rebellious god, the poet as guide, the vision of hell and others.
Full course, Modules 3-4. Ms. Toepel.

Comparative Literature 155. SHORT FICTION FROM BOCCACCIO TO BRECHT.

Not offered, 1975-76.

A generic and historical study of the shorter forms of narrative prose such as short story and novella. Readings vary with the availability of texts, but will most likely include Boccaccio, Maupassant, Thomas Mann, Brecht, Chekhov, Poe, Steinbeck, Dylan Thomas and Richard Brautigan. The changing social and aesthetic function of he forms will be related to other types of literature and to he rise of the novel as the dominant narrative art. Some heoretical and critical writings will be included in the syllabus.

Mr. Hughes.

Comparative Literature 168. MUSIC IN GERMAN LITERATURE AND THOUGHT. *Not offered, 1975-76.*

Countless musicians, philosophers and writers have speculated on the nature of music, its mysterious power to influence people and to communicate strong feelings. This course will be devoted to reading and discussion of works by the following authors from the German speaking countries of the nineteenth and twentieth centuries: Wackenroder, Kleist, Schopenhauer, E.T.A. Hoffmann, Goethe, Grillparzer, Heine, Mörike, Wagner, Nietzsche, Hesse and Thomas Mann. The approach will be predominantly thematic; however, several works will be studied which reveal the author's successful attempts to employ musical devices and structures in his literary creations.

Mr. Kaiser.

Comparative Literature 180. IRRATIONAL CURRENTS IN CONTEMPORARY THEATRE.

A study of the preoccupation in modern theatre with "primitive" forms of dramatic expression such as ritual, myth, magic, non-verbal communication, theatre as a form of popular psychotherapy.

Full course, Module 5. Mr. Spingler.

Comparative Literature 185. READINGS IN MODERN FICTION.

A study of modernism in fiction, with emphasis on the short story and novella. Works by continental, English and American writers from the mid-nineteenth century to the present — Dostoevsky, Tolstoy, Conrad, Lawrence, Joyce, Faulkner, Mann, Sartre and others.

Full course, Modules 3-4. Ms. McCall.

Comparative Literature 190. CRITICAL APPROACHES TO LITERATURE.

This course introduces students to a wide variety of critical approaches which have been taken toward literature. Although some Neo-Classical and Romantic criticism is discussed, the emphasis is on those postures characteristic of the twentieth century and which the student is most likely to encounter and to find fruitful for the development of his own critical responses: the psychological approaches of Freud and Jung, the historical and Marxist methodologies, existentialist interpretations, the "intrinsic" approach of the New Criticism, the perspectives of literary sociology and others.

Full course, Modules 1-2. Mr. Hughes.

Comparative Literature 205. EXPERIMENTS IN MODERN NARRATIVE FORM.

Not offered, 1975-76.

This course investigates the modifications of the traditional novel form which have maintained the novel's position as the major literary genre of the twentieth century. Representative works of the following authors will be studied: Joyce, Virginia Woolf, John Fowles, Proust, Beckett, Michel Butor, Thomas Mann, Hermann Broch.

Mr. Hughes.

Comparative Literature 210. THE LITERARY HERO.

As early as 1499, in European literature, a harlot becomes the heroine of a major work. The intrusion of characters of less than heroic stature is an innovation that merits some study. Beginning with the *Celestina,* and followed by a number of works including *Lazarillo de Tormes* and *Moll Flanders,* an attempt will be made to trace the increasing importance of characters of "piccola nazione" in the literary work. Heroic qualities yield to their opposite. The questions and problems that arise as a result of such a displacement will be the subject of analysis and commentary.

Full course, Module 5. Mr. Barbera.

Comparative Literature 230. ELEMENTS OF DRAMA.

An exploration of ways of approaching the dramatic text based on the conditions and problems peculiar to the stage. Through the study of representative plays from major dramatic periods, the course will investigate the nature of such concepts of dramatic analyses as Plot, Character, Dialogue and Enactment as well as such elements of dramatic aesthetics as Tempo, Mode, Image and Sequence of Impressions. The particular nature of the points of view of playwright, director, actor and spectator will be investigated.

Full course, Modules 3-4. Mr. Spingler.

Comparative Literature 235. PROBLEMS IN DRAMA: FARCE AND COMEDY. *Not offered, 1975-76.*

The class will explore certain problems peculiar to Drama from the point of view of the relationships between the written text and performance. The distinctive natures of farce and comedy will be studied.

Mr. Spingler.

Comparative Literature 240. ELEMENTS OF NARRATIVE.

An introduction to the traditions and techniques associated with the development of western narrative literature. The course will explore two central areas of critical concern: the conventions of the narrative art (genre distinction, problems of verisimilitude, peripatetic and picaresque forms); techniques and the analysis of narrative models (rhetorical and linguistic devices, formal and structural approaches to the narrative text, non-literary disciplines — psychology, history, anthropology — and the understanding of narrative models).

Full course, Modules 3-4. Mr. D'Lugo.

Comparative Literature 251. SEMINAR IN LITERARY THEORY AND PRACTICE.

This core course is required of candidates in the B.A./M.A. Comparative Literature Program and is open to majors in Comparative Literature with permission of the instructor. The course will attempt to answer some fundamental questions concerning the nature, meaning and significance of literature. Literature as a body of material defies exact definitions or rules. The course will necessarily be tentative and exploratory and problems arising from disputed views through the centuries will be considered. A limited number of works will be studied as problematical texts. Indivisible.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Barbera.

Comparative Literature 256. COLLOQUIUM ON PROBLEMS.

An ongoing colloquium designed to consider the formulation and resolution of problems in comparative literature. (Prerequisite: open to and required of students accepted into the Comparative Literature Program).
Staff.

C. FRENCH

French 11. ELEMENTARY.

For beginners with no background in the language. Grounding in all four language skills (hearing, speaking, reading, writing) as preparations for subsequent courses conducted in the language. Four class meetings a week plus three half-hour periods of individual work in the language laboratory. Indivisible course.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Spingler.

French 11. ELEMENTARY (ADVANCED SECTION).

A fresh start for students with some previous exposure to the language, but who are not yet prepared to enter the intermediate course. Designed to impart an active knowledge of French, through grammar study and oral practice, in class and in the language laboratory with integrated short readings in French prose, poetry and theatre. Indivisible course.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Nigrosh.

French 12. INTERMEDIATE.

Review of French grammar. Reading and discussion of provocative works in journalistic and literary prose, as well as poetry and theatre to acquaint students with outstanding personalities and ideas in French literature. Conducted in French. Individual work in the language laboratory. Prerequisite: French 11 or equivalent background in the language.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Spingler, Ms. Nigrosh.

French 127. SPEAKING FRENCH: INTERMEDIATE LEVEL.

The goal of the course is to increase the oral fluency of the intermediate student of French. Some class discussions will focus on examples of French culture in our own environment. Trips around Worcester and Boston to see films and visit museums will provide the stimuli for these discussions. Other topics of conversation will be based on group interest. Prerequisite: French 11.
Full course, Module 5. Staff.

French 131. READINGS IN FRENCH LITERATURE.

Third-year level. The emphasis in the first semester is mainly on the study of 20th century literature analyzed with respect to theme, tone, symbol, character and plot. The second semester deals with literary and social aspects of outstanding modern authors. Conducted in French. Prerequisite: the first semester of French 12 or equivalent skill in the language, to be determined by a placement test.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. McCall, Mr. King.

French 132. SARTRE AND CAMUS.

A study of the major literary works of Sartre and Camus in the context of each writer's philosophical and political theories.
Full course, Modules 1-2. Ms. McCall.

French 137. ORAL AND WRITTEN FRENCH.

The aim of this third-year course is to perfect skills in communication both oral and written. In the first semester, particular attention is given to the sounds of French and to its rhythm and melodic patterns. In the second semester, somewhat more attention is given to grammatical patterns and written French and fluency in the spoken language. Conducted in French. Meets twice a week for two hours plus three half-hour periods in the language laboratory. Prerequisite: Grade of B- or higher in French 12, or equivalent skill in the language, to be determined by a placement test. Admission is subject to consent of instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. King.

French 165. FRENCH PLAY PRODUCTION.

A course designed to provide direct experience of the theatrical synthesis within which the play and the actor operate. The course will concentrate on one playwright, studying him in terms of all the problems peculiar to the staging of his plays, sets, props, costumes, acting styles, gesture and blocking. The practical aspects will be synthesized with academic research into the dramaturgy, themes, social context and style of the author's period. Possible playwrights to be studied: Molière, Marivaux, Ionesco, Beckett. For the fall of 1975, the playwright will be Samuel Beckett. Prerequisite: speaking knowledge of French and consent of the instructor. Given in French.
Full course, Modules 1-2. Mr. Spingler.

French 230. IMAGES OF WOMEN IN THE FRENCH NOVEL: MEN CREATING WOMAN.

Through the historical examination of a tradition which has been central in shaping our notions of women and of love, we will try to come to some understanding of the roles of women in the male imagination, and how these roles have affected women's fantasies and realities. Readings will include *Tristan et Iseut, La Nouvelle Heloise, Les Liaisons Dangereuses, Madame Bovary, Une Vie, Nadja, L'Histoire d'O,* with reference throughout the course to relevant historical and theoretical texts.
Full course, Modules 1-2. Ms. McCall.

French 232. IMAGES OF WOMEN IN THE FRENCH NOVEL: WOMEN CREATING WOMAN.

Through the historical study of women writers in France, we will examine the notion of feminine sensibility and try to understand how each writer's sense of herself as a woman affects her writing. Readings will include works by and about Mme. de Lafayette, Mme. de Staël, George Sand, Colette, Simone de Beauvoir, Christiane Rochefort, Monique Wittig.
Full course, Modules 3-4. Ms. McCall.

French 251. EPIC AND ROMANCE, *THE CHANSON DE ROLAND* AND THE *ROMAN DE TRISTAN ET ISEUT.*

Not offered, 1975-76.

A study principally in modern French translation of the outstanding literary achievements of medieval French literature with particular attention to the *Chanson de Roland* and the *Roman de Tristan et Iseut.* The development of lyric poetry will be briefly treated with closer study of François Villon. The origins of medieval theater will be studied with the fifteenth-century *Farce de Maître Pathelin* analyzed in detail.

Mr. King.

French 252. RENAISSANCE IMAGINATION, FICTION WRITERS OF THE RENAISSANCE.

Not offered, 1975-76.

Prose fiction writers of the renaissance will be studied, particularly selections from Rabelais' unclassifiable masterpiece, *Gargantua et Pantagruel,* Marguerite de Navarre's *Heptaméron,* Bonaventure des Périers's *Nouvelles recreations et joyeaux devis,* Noël de Fail's *Les Propos rustiques et facétieux.* Some attention will be given to other prose writers of the sixteenth century.

Mr. King.

French 253. FRENCH POETRY FROM CHENIER TO VERLAINE.

From the rebirth of lyric verse at the time of the French Revolution through the romantic outburst, the Parnassian perfection, to Baudelaire and his followers in the symbolist movement. Poets to be emphasized: Chénier, Hugo, Vigny, Hérédia, Baudelaire, Verlaine. Admission subject to the consent of the instructor.
Full course, Modules 1-2. Mr. King.

French 255. THE MODERN FRENCH THEATRE.

Not offered, 1975-76.

A study of the origins and development of *le théâtre nouveau* with emphasis on dramaturgy and *mise en scène.* The focus of the course is upon the theatre since 1950 especially Ionesco, Beckett, Genêt and Arrabal, but the course also explores the affinities between these playwrights and the Dada and Surrealist movements, and studies three precursors: Jarry, Ghelderode and Artaud. Given in French.

Mr. Spingler.

French 256. FRENCH CLASSICAL TRAGEDY.

An intensive study of some of Corneille's and Racine's major tragedies. These will be analyzed closely from the point of view of dramaturgy, structure and myth.
Full course, Modules 1-2. Mr. Spingler.

French 257. FRENCH POETRY FROM CHARLES D'ORLÉANS TO THE BAROQUE (1400-1630).

Not offered, 1975-76.

The main currents of French poetry from the last of the great medieval poets to the beginning of the classical period. Special attention will be given to Charles d'Orléans, François Villon, Clément Marot, Joachim du Bellay, and Pierre Ronsard. Admission subject to the consent of the instructor.

Mr. King.

French 258. EXPERIMENTS IN SELF-CONSCIOUS NARRATIVE: NOVEL AND AUTOBIOGRAPHY.

A study of contemporary French prose from the point of view of the author's self-affirmation through narrative. The problem of a possibly blurred division between fact and fiction, history and myth, will be explored through a study of novels and autobiographies of Gide, Sartre, Genêt, Beckett, Michel Leiris and Henri Michaux.
Full course, Modules 3-4. Mr. Spingler.

French 261. SENIOR TUTORIAL.

A program of extensive readings and of tutorial meetings designed to provide the student with a broad view of the whole of French literature. The readings will be planned individually for each student in order to complement his previous course work.

Staff.

French 106. SPECIAL TOPICS IN FRENCH.

Variable credit.
Modules 1-2-3-4-5. Staff.

French 206. SPECIAL TOPICS IN FRENCH.

Variable credit.
Modules 1-2-3-4-5. Staff.

FRENCH LITERATURE COURSES TAUGHT IN ENGLISH

French 130. MODERN FRENCH NOVEL.
Not offered, 1975-76.

Readings and discussions of outstanding works of contemporary French fiction, including novels by Gide, Malraux, Sartre and Camus.
Ms. McCall.

D. GERMAN

German 10. READING KNOWLEDGE OF GERMAN.

A course in grammer and reading that will provide the student with the ability to read scientific and scholarly literature of average difficulty. No previous knowledge of German required. Indivisible course. Offered in alternate years.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Schatzberg.

German 11. INTRODUCTORY GERMAN.

This course is designed to impart an active command of the German language. It combines the study of grammar with oral practice and readings in literary and expository prose. Indivisible course.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Hughes.

German 12. INTERMEDIATE GERMAN.

Review of German grammar. Reading and discussion of significant works in prose, poetry and drama to acquaint students with outstanding writers and ideas in German literature and culture. Conducted in German. Individual work in the language laboratory. Weekly written assignments. Prerequisite: German 11 or equivalent background in the language.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Overvold, Mr. Kaiser.

German 127. DRAMATIC EXPRESSION IN GERMAN.

This course provides the more advanced student of the language with the opportunity to refine and practice the habits of gesticulation, intonation and rhythm which characterize contemporary spoken German. Under close supervision, the class studies and learns one or more contemporary plays with a view to eventual production or dramatic reading of the piece(s). Emphasis is placed on pronunciation and gesture, and on the development of those intonational refinements appropriate to the interpersonal situations of the texts studied. Although discussion of the dramatic works as literature is clearly necessary, it should be noted that the course is essentially an advanced language course. Active participation of all students is required. Examination consists in the preparation of a dramatic passage which the student has prepared outside of class. Prerequisite: German 12 or equivalent.
Full course, Modules 3-4. Mr. Hughes.

German 130. MODERN GERMAN PROSE.
Not offered, 1975-76.

Selected works by Mann, Hesse, Kafka, Dürrenmatt and Grass. Discussions, oral and written reports in German. Prerequisite: German 12 or equivalent.
Full course. Mr. Hughes.

German 132. ADVANCED COMPOSITION AND CONVERSATION.

Designed to develop accuracy and fluency of oral and written expression. Review of selected problems of grammar and exercises in idiomatic use of the language. Reading and analysis of modern short stories and discussion of significant aspects of contemporary German. Oral reports, weekly compositions. Required of majors. Prerequisite: German 12 or equivalent. Admission subject to consent of instructor.
Full course, Modules 1-2. Mr. Kaiser.

German 136. GERMAN LYRIC POETRY.

Although examples from Luther to the present will be studied, the course is not primarily a survey of German lyric poetry, but rather an intensive study of selected poems. The student should, in analyzing the poems, gain some insight into the nature of the poetic statement, including the technical aspects of prosody. Wherever possible, musical settings will be considered to enrich the aesthetic experience. Prerequisite: German 12 or equivalent.
Full course, Modules 3-4. Mr. Kaiser.

German 138. MODERN GERMAN DRAMA.

Reading and interpretation of selected plays by Brecht, Frisch, Dürrenmatt, Grass, Weiss and Handke. Discussions, oral and written reports in German. Dramatic readings of selected scenes will be practiced with a view to introducing the element of performance in the interpretation of a text. Prerequisite: German 12 or equivalent.
Full course, Modules 1-2. Mr. Schatzberg.

German 140. THE AGE OF ENLIGHTENMENT AND THE PERIOD OF STORM AND STRESS.
Not offered, 1975-76.

A study of the major ideas and representative authors of the German enlightenment and the Period of Storm and Stress with emphasis on the conflict between rationalism and irrationalism in the second half of the eighteenth century. Prerequisite: German 12.
Full course. Mr. Schatzberg.

German 142. GERMAN ROMANTICISM.
Not offered, 1975-76.

An analysis of German Romanticism from its beginning in the seventeen-nineties to its decline in the eighteen-thirties. Aesthetic credos, lyric poetry, the drama, major prose works (among them the fairy tale as an art form) will be discussed in their relation to the intellectual history of the period. Authors include the Schlegel brothers,

Hölderlin, Novalis, Tieck, Wackenroder, Kleist, Brentano, E.T.A. Hoffmann, Eichendorff and Heine. Prerequisite: German 12 or equivalent.
Full course. Mr. Schatzberg.

German 145. THE GERMAN NOVELLE.

An historical and critical study of this uniquely German genre. Particular attention will be paid to narrative technique and to the typical features of the novelle distinguishing it from the short story on the one hand and from the novel on the other. Selections range from Early Romanticism to Thomas Mann. Where applicable, a number of poems by the author under consideration will be discussed. Prerequisite: German 12 or equivalent.
Full course, Modules 1-2. Mr. Kaiser.

German 155. "BIEDERMEIER" AND YOUNG GERMANY. *Not offered, 1975-76.*

A study of post-Romantic movements in German literature and their relation to intellectual and social trends. Discussion and analysis of representative dramatic and narrative works by Grillparzer, Gotthelf, Droste-Hülshoff, Mörike, Stifter, Heine, Grabbe and Büchner. Prerequisite: German 12 or equivalent.
Half course. Mr. Kaiser.

German 156. REALISM. *Not offered, 1975-76.*

Reading and discussion of narrative prose and poetry of German "poetic realism" which is characterized by a peculiar fusion of objective and subjective elements. Particular attention will be paid to the writers' image of society and to aspects of narrative technique and style. Authors include Ludwig, Keller, Storm, Meyer, Raabe, Fontane. Prerequisite: German 12 or equivalent.
Half course. Mr. Kaiser.

German 162. GOETHE'S *FAUST*. *Not offered, 1975-76.*

Reading and interpretation of Goethe's *Faust I* and *II*. Discussions, oral and written reports in German. Prerequisite: German 12 or consent of the instructor.
Full course. Mr. Schatzberg.

German 166. GERMAN DRAMA FROM LESSING TO EXPRESSIONISM. *Not offered, 1975-76.*

Reading and discussion of representative plays by the chief German dramatists from the end of the eighteenth to the early twentieth century. The course will focus on the sociopolitical aspects of these works, on the aims and concepts of the dramatic art and the changing traditions in playwrighting. Authors include Lessing, Goethe, Schiller, Kleist, Grillparzer, Büchner, Hebbel, Hauptmann, Schnitzler, and Kaiser. Prerequisite: German 12 or equivalent.
Full course. Mr. Kaiser.

German 170. THOMAS MANN. *Not offered, 1975-76.*

A concentrated study of the short stories and of the novel Felix Krull. Mann's development is traced from his early aestheticism and cultural pessimism to his later avowal of democratic socialism and historical optimism. Discussions of Nietzsche, Schopenhauer, Wagner and Freud will illuminate Mann's changing perspective and artistic values and will take into account some reading in the historical background of the time.
Half course. Mr. Hughes.

German 172. NATURALIST AND EXPRESSIONIST DRAMA. *Not offered, 1975-76.*

Drama during the last quarter of the 19th and the first quarter of the 20th centuries. Writers to be read include Hauptmann, Schnitzler, Kaiser, Wedekind, Hofmannsthal, Barlach and Brecht; themes include decadence and impressionism. The dramatic "movements" will be related to the social and aesthetic theories which underlie them. This half century is extremely diverse and politically unstable in Germany and Austria; some reading in the cultural and historical background will be necessary.
Half course. Mr. Hughes.

German 190. GOETHE. *Not offered, 1975-76.*

An introduction to the life and work of Goethe, excepting his *Faust*. Prerequisite: consent of the instructor. Given in German.
Full course. Mr. Schatzberg.

German 192. SCHILLER AND KLEIST. *Not offered, 1975-76.*

A study of major literary works of Schiller (drama, poetry) and Kleist (drama, narrative prose). The works will be considered in terms of the historical epoch in which they were written. Discussion will focus on structural, moral, socio-political and existential aspects. Given in German. Prerequisite: German 12 or equivalent.
Full course. Mr. Kaiser.

German 196. INDEPENDENT READING AND RESEARCH IN GERMAN LITERATURE.

Independent course of study limited to qualified juniors and seniors. Reading and research will be in German or English and the program arranged individually. Prerequisite: consent of the instructor.
Variable credit.
Modules 1-2-3-4. Staff.

German 106. SPECIAL TOPICS IN GERMAN.

Variable credit.
Modules 1-2-3-4-5. Staff.

German 206. SPECIAL TOPICS IN GERMAN.

Variable credit.
Modules 1-2-3-4-5. Staff.

GERMAN LITERATURE COURSES TAUGHT IN ENGLISH

German 116. COLLOQUIUM ON MODERN GERMAN LITERATURE. *Not offered, 1975-76.*

The purpose of this course is to examine some of the dominant themes in modern German literature and to acquire skill in interpreting literary works. Enrollment is

limited to assure every student the opportunity for active participation. Subject for fall, 1974: selected prose works of Rilke, Mann, Hesse, Kafka, Grass. Given in English.
Full course, Modules 1-2. Mr. Schatzberg.

German 152. THE MEDIEVAL GERMAN EPIC.

Around 1200 a number of epic masterpieces were produced in Germany which have taken their place in world literature. The following works which represent the finest examples of the heroic and courtly epic tradition in German literature will be studied: *The Nibelungenlied*, Hartmann von Aue's *Gregorius*, Wolfram von Eschenbach's *Parzival* and Gottfried von Strassburg's *Tristan*. The structure of medieval society, religious ideals, the chivalric code as well as Germanic mythology, the legends of the Celtic King Arthur and historical events, especially the crusades, will be dealt with to the extent they are reflected in these works. Given in English.
Full course, Modules 3-4. Mr. Kaiser.

German 182. HESSE SEMINAR.

A study of Hesse's major novels, *Demian, Steppenwolf, Narcissus and Goldmund, The Journey to the East* and *The Glass Bead Game,* with selected readings from Nietzsche, Freud and Jung as significant formative influences on the author's intellectual and artistic development. Given in English.
Half course, Module 3. Mr. Schatzberg.

German 183. KAFKA SEMINAR.

A careful study of Kafka's short stories, parables and aphorisms. Prerequisite: good familiarity with the major short stories and novels of Kafka. Given in English.
Half course, Module 4. Mr. Schatzberg.

E. HEBREW

Hebrew 11. ELEMENTARY HEBREW.

Emphasis on the spoken, living Hebrew language. Acquisition of vocabulary and basic grammar through reading of simple texts. Part of course, audio-visual method of "Habet U Shma." Three class meetings a week plus one hour of drill and one hour of individual work in the language laboratory. Indivisible course.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Raviv.

Hebrew 12. INTERMEDIATE HEBREW.

Reading of graded texts: Selected works from modern Hebrew literature, newspapers, etc. Enrichment and reinforcement of grammatical structures and written expression. Three class meetings a week plus one hour of drill and one hour of individual work in the language laboratory. Prerequisite: the equivalent of Hebrew 11.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Raviv.

Hebrew 130. ADVANCED HEBREW.

A language-literature course based on readings of simple texts in contemporary Hebrew prose, drama, poetry. Advanced grammar and composition, with emphasis on the spoken language. Prerequisite: Intermediate Hebrew or the equivalent.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Raviv.

LITERATURE COURSES TAUGHT IN ENGLISH

Hebrew 119. HEBREW SCRIPTURES — PENTATEUCHAL AND HISTORICAL BOOKS. *Not offered, 1975-76.*

A survey and critical analysis of Genesis, Exodus, Leviticus, Numbers, Deuteronomy, Joshua, Judges, Samuel, and Kings.
Full course, Modules 1-2. Rabbi Klein.

Hebrew 120. HEBREW SCRIPTURES — PROPHETIC AND WISDOM LITERATURE.

An analysis of relevant texts in Amos, Hosea, Micah, Isaiah, Jeremiah, Ezekiel in terms of their historical, social and religious background and their role in shaping the thinking of the Biblical Age.
Full course, Modules 1-2. Rabbi Klein.

Hebrew 121. THE WISDOM LITERATURE OF THE BIBLE. *Not offered, 1975-76.*

Problems of life and faith in the Biblical books, Psalms and Proverbs, compared to the wisdom literature of the ancient near eastern cultures of the time.
Mr. Kushner.

Hebrew 122. WHEN GOOD PEOPLE SUFFER. *Not offered, 1975-76.*

A study of the biblical book of Job compared to Camus' *The Plague,* Wilder's *Bridge of San Luis Rey* and Macleish's *J.B.*
Mr. Kushner.

Hebrew 125. RELIGION IN A TIME OF CRISIS: THE LITERATURE OF FIRST CENTURY ISRAEL.

The First Century changed the history of the Western World. The Jewish nation was defeated by the Romans and cast into exile. A new religion, Christianity, emerged along side it. This course will examine the literature of those turbulent times and of the centuries leading up to them: the Apocryphal books of the Bible, the Dead Sea Scrolls, the beginnings of the Mishna, Josephus, Philo and the New Testament. We will see from these writings how people turned to religion in times of unprecedented stress and upheaval and how religion changed to meet their needs.
Full course, Modules 3-4. Mr. Kushner.

Hebrew 140. JEWISH MYSTICISM. *Not offered, 1975-76.*

Major ideas of Jewish Mysticism from Rabbinic times to the emergence of the Hassidic movement. This course will

examine the growth of Kabbalism — Jewish Mysticism as a religious movement. Various kabbalistic ideas, such as the theory of the Hidden God and His attributes, will be examined in depth. The role of Mysticism in the development of Jewish thought will be evaluated.
Half course, Module 2. Mr. Kauffman.

Hebrew 165. MODERN HEBREW LITERATURE: THE SHORT FICTION OF S. Y. AGNON.

An introduction to the writings of Israel's Nobel Prize winner for literature, through his short stories, read in translation. In addition to examining individual stories, we will pay attention to Agnon's place in Jewish literary tradition and the world literary scene, his ambivalence toward religion and his view of human nature.
Half course, Module 1. Mr. Kushner.

Hebrew 175. THE LITERATURE OF MODERN ISRAEL.
Not offered, 1975-76.

The major problems facing the "old and new" generation of Israeli novelists, short story writers, poets and dramatists will be explored. Among the writers included will be Agnon, Hazaz, Burla, Shenberg, Yizhar, Schlonsky, Altermann, Goldberg, Karni, Shamir, Meged, Amihai, Yehoshua, Oz.
Full course. Mr. Raviv.

Hebrew 185. TRENDS AND VALUES IN YIDDISH LITERATURE. *Not offered, 1975-76.*

An outline of the major lines of development from the folk literature of the sixteenth century to the contemporary short story, novel, essay and poem. Yiddish literature will be viewed both as an aspect of world literature and as a major factor in the preservation and enhancement of the specific distinguishing characteristics of the Jewish experience.
Full course. Mr. Goldsmith.

F. RUSSIAN

Clark students may take additional courses in Russian language and literature at the College of the Holy Cross and Assumption College through the Consortium.

Russian 11. INTRODUCTORY RUSSIAN.

An introduction to the written and spoken language. Four class periods and three laboratory sessions per week. Indivisible course.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Kriskijans.

Russian 12. INTERMEDIATE RUSSIAN.

Advanced Russian grammar. Continued emphasis upon reading and conversation. Three class periods, one supervised drill session and three laboratory sessions per week. Open to qualified freshmen.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Kriskijans.

Russian 106. DIRECTED READING.

Students interested in specific authors and/or topics in Russian literature and civilization may receive instruction and guidance in either English or Russian.
Variable credit.
Modules 1-2-3-4-5. Ms. Kriskijans.

RUSSIAN LITERATURE COURSES TAUGHT IN ENGLISH

Russian 130. RUSSIAN SHORT STORY.
Not offered, 1975-76.

A study of the short story genre in Russian literature. Readings will include the works of Pushkin, Gogol, Chekhov, Gorky, Andreyev, Bunin, Solzhenitsyn and others. Given in English.
Full course, Modules 3-4. Ms. Kriskijans.

Russian 170. DOSTOEVSKY.
Not offered, 1975-76.

This course will focus on various aspects of Dostoevsky's art and thought, through lectures and class discussion. Readings include shorter works, such as "Notes from the Underground," and the major novels, *Crime and Punishment, The Idiot, The Possessed* and *The Brothers Karamazov.* Given in English.
Ms. Kriskijans.

G. SPANISH

Spanish 11. ELEMENTARY.

For beginners or others not yet qualified to enter the intermediate course. Grounding in all four language skills (hearing, speaking, reading, writing) as preparation for subsequent courses conducted in the language. Three class meetings a week plus individual work in the language laboratory. Indivisible course.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Reid, Ms. D'Lugo.

Spanish 12. INTERMEDIATE.

Further development of the basic language skills, with particular emphasis during the first semester on oral facility. Class work will involve tapes of native speakers, discussions of themes of current interest based upon readings in Spanish and Spanish-American culture, as well as role-playing in various types of situations. Grammar review will be based on the specific needs of the group. Prerequisite: Spanish 11 or equivalent skill in the language.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. D'Lugo.

Spanish 117. SPEAKING SPANISH: BEGINNING LEVEL.
Not offered, 1975-76.

An intensive conversation course designed for students who have completed Spanish 11 or the equivalent. The course objective is to liberate the student from having to pause over verb conjugations, special phrasings, etc., and

to help him gain a relaxed attitude toward a new language. The student will become more self-confident as he realizes the extent to which he can express himself. Course activities will be varied, ranging from spontaneous conversation based on topics of current interest to dramatizations of dialogs or skits.
Full course (intensive), Module 5. Ms. D'Lugo.

Spanish 127. PRACTICE IN ORAL AND WRITTEN SPANISH.

An advanced intermediate course to help students develop fluency and accuracy in the spoken and written language. Classes will stress composition and pronunciation, as well as conversation practice. Intended primarily for freshmen who have completed 2-3 years of high school Spanish.
Full course, Modules 1-2. Mr. Barbera.

Spanish 131. READINGS IN MODERN SPANISH AMERICAN LITERATURE.

Third-year level. Variable Content. Fall, 1975: *El campo y la ciudad.* Readings and theme-centered interaction discussions around the emerging images of urban and rural culture in three Spanish American societies (Mexico, Puerto Rico and Argentina), and the manner in which these are portrayed in representative novels and short stories. Conducted in Spanish. Prerequisite: Spanish 12 or equivalent skill in the language.
Full course, Modules 1-2. Mr. D'Lugo.

Spanish 131.1. READINGS IN MODERN SPANISH AMERICAN LITERATURE: THEATRE.
Not offered, 1975-76.

Third-year level. Prerequisite: Spanish 12 or equivalent skill in the language.
Half course, Module 1. Mr. D'Lugo.

Spanish 131.2. READINGS IN MODERN SPANISH AMERICAN LITERATURE: POETRY.
Not offered, 1975-76.

Third-year level. Prerequisite: Spanish 12 or equivalent skill in the language.
Half course, Module 2. Mr. D'Lugo.

Spanish 132. INTRODUCTION TO SPANISH LITERATURE OF THE 20TH CENTURY. *Not offered, 1975-76.*

Reading and discussion of selected works from the Generation of 1898 to the contemporary period (Unamuno, Garcia Lorca, Cela, Benavente, Buero Vallejo, Sastre, Goytisolo). Emphasis on conflictual structures within dramatic and narrative works: individual vs. the group as seen particularly in the Civil War and its effects on subsequent literary and social development in Spain. Prerequisite: Spanish 131 or permission of the instructor.
Full course, Modules 3-4. Mr. D'Lugo.

Spanish 134. ASPECTS OF MEXICO.

This course aims to communicate something of the rich and unique cultural heritage of Mexico as seen through its history from pre-Columbian times down to the present, and especially as portrayed by creative writers since the cataclysmic events of the Revolution of 1910. According to the inclinations of the students, attention may also be given to such factors as the indigenous cultures, archaeology, folklore, politics and art, and the profound effects of Mexico's extraordinary, diverse geography on the life of the people. Conducted in Spanish. Prerequisite Spanish 131, or permission of the instructor.
Full course, Modules 3-4. Mr. Reid.

Spanish 134.1. MEXICAN THEMES.

Independent study of literature dealing with some theme of Mexican culture, chosen by the student. Written report. Limited to students currently enrolled in, or who have previously completed, Spanish 134, or have had some comparable introduction to Mexico.
Variable credit
Modules 1-2-3-4-5. Mr. Reid.

Spanish 135. HISPANIC ETHOS AND CINEMA: THE FILMS OF LUIS BUÑUEL.

Viewing, discussion and analysis of the major films of Luis Buñuel in the context of the cinematic medium as well as in the broader tradition of a particular critique of Hispanic social values. The recurrent motifs of catholicism and the church, charity, violence and sexual repression will be examined as cinematic form and substance. Readings will include film scripts, film criticism and source novels. Conducted in Spanish. Prerequisite: Spanish 131 or permission of the instructor. Attendance at 10 film showings during the semester (approximately one weekly) will be required of students taking the course for credit. All films will be subtitled in English.
Full course, Modules 1-2. Mr. D'Lugo.

Spanish 136. WOMEN'S ROLE IN SPANISH LITERATURE. *Not offered, 1975-76.*

Selected works will be studied with a focus on the role of women in the literature of Spain throughout the centuries. Prerequisite: Spanish 12 or an equivalent skill.
Full course. Mr. Barbera.

Spanish 137. ORAL AND WRITTEN SPANISH.
Not offered, 1975-76.

Third-year level. A rapid, intensive review of grammar; the elements of phonetics; exercises in composition and pronunciation; conversational practice. Conducted in Spanish. Two regular class periods, one two-hour session, and one to two hours in the laboratory per week. Prerequisite: Grade of B- or higher in Spanish 12 or equivalent skill in the language. Admission subject to consent of instructor. Offered in alternate years.
Full course, Modules 3-4. Mr. Barbera or Mr. D'Lugo.

Spanish 138. THE EXPERIENCE OF POETRY: SOME SPANISH LYRICS.

This course will focus on an examination of the nature of poetry and the significance of the poetic experience, a small number of texts serving as illustrative material. The

framework in which the poems are to be read will be in large part created by the class's shared reflections on various factors making up the poetic experience. Questions of the interrelation between the musical elements of form and the symbolic elements of content will underlie intensive study of each text, regarded more as a work of art to be recreated than a mere linguistic communication to be read. In addition to the poems treated by the whole class, each student will read more widely in poetry selected by his own taste and inclinations. Offered in alternate years. Prerequisite: at least one course at third year level.
Full course, Modules 1-2. Mr. Reid.

Spanish 139. LITERATURE AND REVOLUTION IN SPANISH AMERICA. *Not offered, 1975-76.*

Prerequisite: Spanish 131 or permission of instructor.
Full course, Modules 1-2. Mr. D'Lugo.

Spanish 205.1. PROSEMINAR. *Not offered, 1975-76.*

Basic readings. Variable topic.
Variable credit, Module 1. Mr. D'Lugo.

Spanish 205.2. PROSEMINAR. *Not offered, 1975-76.*

Independent study related to the topic of Spanish 205.1. Prerequisite: Spanish 205.1.
Variable credit, Module 2. Mr. D'Lugo.

Spanish 242. EARLY SPANISH LITERATURE FROM THE *POEMA DE MIO CID* TO THE *CELESTINA*.
Not offered, 1975-76.

This course will emphasize the nature of epic poetry, the first manifestation of "realism" in the literature of the Middle Ages, and will culminate in the hybrid masterpiece, the *Celestina,* a combination of novel and drama, unique in the history of European literature. Conducted in Spanish. Prerequisite: grade of B- or higher in a third-year course. Offered in alternate years.
Full course, Modules 1-2. Mr. Barbera.

Spanish 243. CERVANTES.

This course will concentrate upon *Don Quijote.* The picaresque novel will be read for its influence upon Cervantes. The views of important essayists will be studied in conjunction with the reading of the Quijote. Conducted in Spanish. Prerequisites: grade of B- or higher in a third-year course.
Full course, Modules 1-2. Mr. Barbera.

Spanish 244. THE DRAMA OF THE SIGLO DE ORO.
Not offered, 1975-76.

Besides studying the major figures such as Lope de Vega, Tirso de Molina, Alarcón and Calderón de la Barca, there will be some study of the origins of the drama in Spain. Conducted in Spanish. Prerequisite: grade of B- or higher in a third-year course. Offered in alternate years.
Full course, Modules 3-4. Mr. Barbera.

Spanish 245. THE MODERN SPANISH NOVEL.

A number of 19th-century novels will be read. The 20th century will be represented by such outstanding novelists as Galdos (who bridges the 19th and 20th centuries), Unamuno, Valle-Inclán, Baroja and Delibes. Conducted in Spanish. Prerequisite: grade of B- or higher in a third-year course. Offered in alternate years.
Full course, Modules 3-4. Mr. Barbera.

Spanish 246. MAIN CURRENTS OF CONTEMPORARY SPANISH AMERICAN FICTION.

Variable content. Spring, 1976: examination of the principal writings of Carlos Fuentes (Mexico) and Julio Cortázar (Argentina) as examples of the changing nature of narrative experimentation in Spanish American fiction over the last three decades. Particular emphasis upon the depiction by each writer of the novel of the foundation of the city (Cortázar's *Rayuela,* Fuentes' *La región mas transparente*).
Full course, Modules 3-4. Mr. D'Lugo.

Spanish 248. SPANISH PHONOLOGY.
Not offered, 1975-76.

An analysis of the pronunciation system of the Spanish language. Prosodic features, intonation, segmental phonemes in the stream of speech; some attention to major dialectal differences. Prerequisite: advanced Spanish; Linguistics 114 (General Phonetics and Phonemics) or a suitable substitute. Any student wishing to offer a substitute for Linguistics 114 should consult the instructor in advance if possible. Conducted principally in Spanish. Given in alternate years.
Half course, Module 2. Mr. Reid.

Spanish 106. SPECIAL TOPICS IN SPANISH.

Variable credit.
Modules 1-2-3-4-5. Staff.

Spanish 206. SPECIAL TOPICS IN SPANISH.

Variable credit.
Modules 1-2-3-4-5. Staff.

SPANISH LITERATURE COURSES TAUGHT IN ENGLISH

Spanish 130. CERVANTES. *Not offered, 1975-76.*

This course will concentrate upon *Don Quixote* with excursions into other writings of Cervantes illustrating the changes in his literary development. Cervantes' debt to previous literary works will be studied. Extensive reading of critical material pertinent to the Quixote will be required. The course will be conducted in English. For students without a command of Spanish, readings will be available in English.
Full course. Mr. Barbera.

H. LINGUISTICS

Linguistics 114. GENERAL PHONETICS AND PHONEMICS.

Refer to course description under Linguistics.
Mr. Reid.

Linguistics 115. MAN AND LANGUAGE.

Refer to course description under Linguistics.
Mr. Reid.

260. LINGUISTICS AND LANGUAGE LEARNING.
Not offered, 1975-76.

Refer to course description under Linguistics. (Also designated Education 260.)
Mr. Reid.

I. ROMANCE LANGUAGES

Romance Languages 258. HISTORY OF THE ROMANCE LANGUAGES.

The development from Latin to French and Spanish, with incidental attention to other Romance Languages. Presupposing no knowledge of Latin, the course will begin with a structural survey of the Latin grammatical system. The principle focus will be on the development from a synthetic structure to the relatively analytic structure of its modern forms, and also on the dynamic interrelations of the phonological, morphological and syntactic systems in this development. Thus primary attention is on internal linguistic history, but with necessary attention to the external history as it may have affected linguistic development. Prerequisites: elementary knowledge of both French and Spanish; and Linguistics 114 (General Phonetics and Phonemics) or a suitable substitute. Any student wishing to offer a substitute for Linguistics 114 should consult the instructor as far in advance as possible. Offered in alternate years.
Full course, Modules 3-4. Mr. Reid.

French

(See Department of Foreign Languages and Literatures.)

Geography

DEPARTMENT FACULTY

Saul B. Cohen, Ph.D., Professor of Geography, Director of the Graduate School of Geography, Adjunct Professor of Government and International Relations
Leonard Berry, Ph.D., Professor of Geography, Co-Director, International Development Program, Dean o the Graduate School, Coordinator of Research
Gerald J. Karaska, Ph.D., Professor of Geography, Editor of *Economic Geography* *
Robert W. Kates, Ph.D., Professor of Geography, University Professor
Duane S. Knos, Ph.D., Professor of Geography
Martyn J. Bowden, Ph.D., Associate Professor of Geography
William A. Koelsch, Ph.D., Associate Professor of History and Geography, University Archivist
Laurence A. Lewis, Ph.D., Associate Professor of Geography
Roger E. Kasperson, Ph.D., Associate Professor of Geography and Government and International Relations
Anne Buttimer, Sr. Mary Annette, O.P., Ph.D., Associate Professor of Geography**
Kang-tsung Chang, Ph.D., Assistant Professor of Geography and Cartography
J. Richard Peet, Ph.D., Associate Professor of Geography
Stephen L. Feldman, M.A., Assistant Professor of Geography
Richard A. Howard, Ph.D., Assistant Professor of Geography and Biology
Douglas L. Johnson, Ph.D., Assistant Professor of Geography
H. Solveig Martennson, Ph.D., Visiting Assistant Professor of Geography
Irving A. Schwartz, M.A., Assistant Professor of Education, Clinical Instructor in Social Studies, Adjunct Assistant Professor of Geography
Harry E. Schwarz, B.C.E., Visiting Professor of Environmental Affairs, Adjunct in Geography
Asher P. Schick, Ph.D., Visiting Professor of Geography

**on leave half year*
***on leave Modules 3-4*

STAFF

Mary A. O'Malley, Administrative Assistant
William J. McCall, M.L.S., Map Curator
Ruth A. Rowles, B.A., Senior Cartographer, Manager Cartographic Laboratory

PROFESSORS EMERITI

Raymond E. Murphy, Ph.D., Professor of Economic Geography, Emeritus
Samuel Van Valkenburg, Ph.D., LL.D., Professor of Geography, Emeritus
Henry J. Warman, Ph.D., Professor of Geography, Emeritus

Each year the School of Geography has in residence or as off-campus affiliates a number of Research Affiliates. For 1975-76 these are: David Sharon, Gerhard Tschannerl, Ian Burton, Ewa Novosielska, Dolores Garcia and Timothy O'Riordan.

When the Graduate School of Geography was organized in 1921, Clark became the second university in the United States to establish a separate graduate program in geography. At the present time, advanced training is provided leading to the master's and doctor's degrees. In addition, the school offers an undergraduate major, and a 7- and 5-year program. B.A.-Ph.D. and B.A.-M.A. degrees. Clark is a center for geographical training and research in the United States, and its various offerings provide a maximum of individual attention through student-teacher dialogue.

UNDERGRADUATE PROGRAM

A. Majors in geography are required to take the following: 1) Survey of Geography (11a) plus two introductory courses from the following: Physical Geography (14a), Economic Geography (15a), Cultural Geography (17b). Substitution of 100-level courses in these four areas may be approved by the department. 2) Skill courses (two of the following): Introduction to Statistical Geography (110a), Computer Programming (212b). Second college year level foreign language, or Introduction to Cartography (191b). 3) A minimum of five elective semester courses in geography. 4) A minimum of four semester courses in a related field. Related fields include: biology, chemistry, computer science, economics, education, government, history, physics, psychology, sociology. 5) Tutorial in Geography (half course for sophomores); Capstone Seminar in Geography (half course for seniors).

For those taking a dual or interdisciplinary major the following are required: Survey of Geography (011); Tutorial in Geography (001); one of the following introductory courses — Physical (014), Economic (015), Cultural (017); two of the four "skills" courses; a minimum of three other elective geography semester courses that are clearly linked to the cognate field; Capstone Seminar (002).

B. The School of Geography initiated its extended major in September 1974. The program covers a 3-year period (sophomore-senior) and includes: 1) An Introductory Tutorial for all geography majors in the sophomore year — this is a 7-week course to include discussion with the faculty leader of the nature of the field, writing short papers, learning what a library and other information resources are for and exploring one topical theme which will be arrived at through student-faculty interaction; 2) A Capstone Seminar for all geography seniors — this is a semester course offered over two modules. It is problem-oriented and results in an individual or team research product. The extended major experience is designed to integrate the student's course program more fully and will provide greater scope and latitude for research/training opportunities.

C. Since 1971-72, formal 7- and 5-year programs for Clark undergraduate students have been offered, leading to the Ph.D. and M.A. degrees in geography. At the undergraduate level, applicants must major in geography and a dual or interdisciplinary field, and make application at the end of the first semester of the junior year. The B.A.-Ph.D. program may include one (the sixth) year off campus, in residence at another university or agency. Admissions are limited to a very small number of highly-qualified students and in subfields of concentration that are approximate to Clark's range of offerings. For specific information, contact the Director of the School of Geography. Applications to these programs should be submitted to the Geography Office no later than May 15th.

THE GRADUATE SCHOOL OF GEOGRAPHY

Admission: Applicants without prior training in Geography are welcome, but depending on their concentrations, may be required to improve their knowledge of elements of geography, economic geography, cartography or descriptive statistics. Courses taken to remedy any deficiencies will not count as part of the regular program. The Graduate Record Examination scores (Verbal and Quantitative) are required of all students with the exception of those in foreign countries. The GRE Advanced Placement Test in Geography is desirable, but not required.

Degree Objectives: The graduate program in geography at Clark has been derived from a synthesis of faculty-student discussions, documents and experiences. The Ph.D. training program stands as the central thrust in the Graduate School of Geography at Clark. In the context of the graduate training program, it is assumed that students may wish to pursue two tracks: one, the traditional Ph.D. with its training and experiential requirements in research and in teaching (assuming minimal steps for competence in the latter); the other, the Ph.D. with training related directly to the competence of individuals as college geography teachers, the thrust being in the combination of work relating to the teaching and learning of geography as a social science, and specialization in one major sub-field in geography. The School of Geography fosters student and faculty exchange with other institutions, including institutions outside the field of geography and with geography departments elsewhere. Clark has long encouraged ties with foreign geography students and faculty. Focus in recent years has also included links with developing institutions in the U.S. through training of prospective faculty and facilitating programs.

Specialized Programs in Sub-Fields: The curriculum is organized to focus on specialized programs in sub-fields of geography. Such sub-fields are developed around a series of sequentially-oriented courses which, in general, occupy from one-third to no more than one-half of the student's formal doctoral program. The sub-fields are organized in accordance with the interests, competencies and breadth of the staff. Programs in Environmental Management and Behavior, Political Geography, Urban Geography, Geomorphology, Historical Geography, Cultural Geography, Geography and its Teaching, are examples of concentrations. Minor field concentration is also required, permitting, as a side benefit, shifts in the major concentration or sub-field. Therefore, even those students who arrive with pre-conceived notions about the major concentration will have opportunities to switch to other fields. In general, sub-fields are organized around committees with three to five staff members. Responsibility for supervision of the student's course, dissertation and other training experiences is with the sub-field advisor.

In organizing the curriculum in this specialized structured manner, there is neither the intention nor the desire to exclude faculty and students who do not wish to operate within the framework of a formal sub-field. Students may wish to create their own personalized programs or fields of concentration outside of the formal sub-fields. The only limit to this lies in the general nature of the offerings and in the interests and competencies of staff. Where formal specialized programs do not exist, it becomes the responsibility of the major advisor to develop, together with the students, a program whose various prerequisites will follow the general form and intent of the Clark graduate geography program. Development and evaluation of specialized programs rests heavily on the activities of joint student-faculty committees. Passing of prerequisites (e.g., substantive course background, statistical methods, computer science or cartography) is essentially the responsibility of the specialized concentration, as is the encouragement of cross-disciplinary training.

Orientation Program for Entering Graduate Students: All entering graduate students are required to take Geography 396a, Approaches to Geography — a series of presentations which will survey research efforts in specific subfields and then continue with a workshop concerned with approaches to learning, the development of a sense of problem and scientific inquiry. As part of this course, a field camp will be held to provide field experience as a basis for identifying problems or for validating existing problems in a specified area. In addition to entering students, continuing students are invited to participate. At the end of the course those students who wish to continue may do so through some form of directed study on an individual or group basis.

Formal Course Requirements: Other than those courses considered prerequisite to the specialized or individually-tailored program, no formal course requirements are set. It is the full responsibility of a student's advisor to require that a student take courses in areas of deficiency. Such courses might be required on a formal basis, on an audit basis or through organized readings.

Proficiency and Research Papers: Two formal papers are required. A proficiency paper, normally submitted during the second semester of the first year, and a research paper in the field of specialization, normally submitted during the second year. Both papers are brief and in the style and form of scholarly articles.

The Proficiency Paper: All incoming students are expected to present the proficiency paper no later than between March 15th and April 15th of the academic year. The objectives of this paper are two-fold: 1) to evaluate a student's ability to think and write logically and to articulate a research problem; and 2) to identify individual strengths and weaknesses as a guide to future course work and needs. The paper should normally not exceed 3 pages (unless the M.A. thesis is presented), excluding specialized bibliographical references, and should represent a finished piece of work in both style, sense of research problem and findings. The style should follow Turabian in terms of what is expected of a scholarly article. The paper may be generated within the context of the Orientation Program. It is expected that this paper wi be read by three individuals, the major reader drawn from the research area and two members of the faculty who pla the role of generalist-readers.

The Research Paper: As a prelude to the developmen of a doctoral dissertation proposal, each student is expected to submit an advanced research paper (15-30 pages in length) in his field of specialization approved by his major advisor. This paper is to be submitted as demonstration of his ability to research a problem in depth and to write it in publishable form (cf. Turabian). Generally the research paper is written in connection with a course or seminar taken in a specialized field and is submitted during the second year. Distinguished from the proficiency paper which is likely to show only preliminary inquiry into a problem area, the research paper is expected to evince mastery of the topic. The advisor is responsible for approving the paper and submitting it to the Geography Office.

The research paper is a prerequisite for the pre-doctoral M.A. Should a student not desire to apply for this M.A., he or she need not submit the research paper. However, it is assumed and strongly urged that all students apply for the pre-doctoral M.A. and submit a paper.

Residence Requirement: A three-year residence beyond the B.A. degree is required for the Ph.D. program. One of the years in residence must be the year in which the dissertation proposal is submitted and approved, and, as part of the three-year residence the student must remain in residence for one semester (or one summer under direct supervision) following approval of the outline to work on the dissertation. After approval of the dissertation proposal, if the dissertation is not completed by the end of four years, the proposal must be submitted for reapproval. One prerequisite for such reapproval is provision for one academic semester's residence during the next year to work on the dissertation. (Twelve weeks during the summer is considered the equivalent of an academic year semester for this purpose, with the proviso that a faculty member be in residence at Clark during the summer and express a willingness to supervise.) Upon completion of all formal requirements, save the completion of the dissertation, the student is expected to file for candidacy with the Graduate School, unless specific permission not to file is granted by the School of Geography. Students entering with an M.A. in a field other than geography will be expected to take essentially the three-year residence program. Students entering with an M.A. in geography from another institution may expect to complete their residence in five semesters or two and one-half years.

Teaching and Research Prerequisite: Some teaching nd research experience at Clark (or its equivalent at nother institution) is prerequisite to the doctor's degree. very effort is made to organize various forms of nternships to provide on- and off-campus training ctivities, at the teaching and research levels, generally at e end of the second year of residence.

OCTOR OF PHILOSOPHY

. Language and/or Alternate Requirement

Options to examination in a traditional foreign nguage are available. These include: 1) computer cience, 2) statistical methods, and 3) cartography; in ddition, other options can be required or made available y individual concentrations with the approval of the aculty. The requirement varies with the concentration.

. Field Camp

Field Camp is a requirement for entering students and s offered as part of the core course (Geography 396). Field echniques will be covered as they relate to problem dentification and problem solving in a specified region in e New England area. Group teamwork will be stressed nd follow-up sessions will be held.

. History and Philosophy of Geography

The history and philosophy of geography is required s part of the Ph.D. examination, in the form of a written ualifying essay related to the major sub-field of oncentration, demonstrating a knowledge of the ntellectual history of the concentration and of its elations to the remainder of the discipline.

. The Ph.D. Examination

All Ph.D. candidates must prepare themselves for xamination in three fields. The major field examination onsists of a 90-minute oral examination. The student nay opt for either a 45-minute oral or a 3-hour written xamination in each of the two minor fields. Selection of ields should be made in consultation with the major dvisor and the supervisory committee at least two nonths in advance of the examination dates, and is subject to departmental approval. In selecting the three ields, breadth in an interrelated set of sub-fields, depth in connection with the proposed dissertation topic, or competencies and availability of staff are considerations.

Under normal circumstances, it is expected that the anguage requirement (or its alternatives) will have been successfully met prior to the student's taking the Ph.D. examination. Approval of the dissertation proposal may precede the Ph.D. examination. Doctoral examinations are not normally conducted between May 1 and September 15, and should be requested 60 days before the desired date.

E. Committee System for Ph.D. Dissertation

The dissertation committee is composed of five faculty members, with responsibilities for: a) approval of the outline; b) reading and reviewing of the dissertation (two readers and three reviewers); and c) participating in the dissertation defense. When the dissertation proposal has been approved by the committee in its entirety or majority, a letter to this effect shall be submitted to the Geography Office by the first reader together with 15 copies of the proposal. The director of the school will then circulate the proposal to each member of the faculty for comments and final approval will be made at the end of two weeks by the director in light of these comments.

When the draft of the dissertation has been approved by the committee, three copies of the draft with a letter to the effect of the approval, signed by the first reader, will be submitted to the Geography Office. The director will then inform the faculty that these copies are available for examination for a period of two weeks. Any time after the end of the two-week period, the defense may be scheduled. In addition to the committee, any member of the Clark faculty (geography or other departments) is invited to participate in the defense. A week before the defense date,.notices will be given of the defense to the Dean of the Graduate School. If the defense is adequate, then the dissertation in final form is delivered, with two copies to the departmental office and the ribbon copy to the Registrar.

MASTER OF ARTS

While the thrust of the Clark Geography Program is at the doctoral level, two types of M.A. degrees will be made available:

A. *The Pre-Doctoral M.A.*

Students working toward the Ph.D. will be granted, upon request, an M.A. degree at the end of the required residence period, having completed: a) the dissertation proposal; b) required course work; c) the Ph.D. preliminary examination; and d) a formal research paper approved by the concentration advisor. (See "The Research Paper" for details.)

B. *The Non-Doctoral M.A.*

Normally no later than at the end of the first semester of the second year of residence, after a review process that includes a proficiency paper in the concentration at the end of the first year, students may opt or may be advised to shift to a terminal M.A. degree, under which circumstances they will be expected to drop one or two courses in order to write a thesis. This thesis is envisaged as a research paper or short article (15-30 pages), demonstrating an ability to define a problem as well as serving as evidence of research competence. The thesis would be presented in a manner as to meet the form and standards of a professionally acceptable article, and will be defended at the Master's Oral Examination.

After approval by a committee consisting of the advisor and two other faculty of the student's choosing three copies of the final draft with a letter by the major advisor noting committee approval will be delivered to the Geography Office. The director will then announce to the faculty that the draft is available for examination. Any time after the end of ten days, the defense may be scheduled. In addition to the committee, any member of the Clark faculty (geography or other departments) is invited to participate in the defense. A week before the defense date, notice will be given of the defense to the Dean of the Graduate School. The thesis committee consists of the major advisor and two reviewers. After approval by the committee, three copies of the final draft are circulated to the faculty as a whole. Following defense of the thesis, two final copies are delivered to the departmental office and the ribbon copy to the Registrar. Thesis defense should be conducted six weeks prior to commencement.

DISTINCTIVE FEATURES AND SPECIALIZATION

The School of Geography is housed in completely new quarters opened for the fall of 1970. Graduate students and senior geography majors are assigned carrels in the *Geography Workroom.* The *Workroom* and other sections of the Geography Building contain specialized equipment and research facilities for the use of students and staff. The *John K. Wright Reading Room* contains the Graduate School of Geography's working reading collection. The core of this collection is the personal library of Dr. John K. Wright. The collection is continuously updated by the addition of new publications in the field of geography plus subscriptions to major geographic and scientific journals. The *Curriculum Library* of the TTT Program (Training Teachers of Teachers) is also located in this Reading Room. The *Libbey Library* of the *Geography Workroom* serves as a student lounge.

The *Guy H. Burnham Map Library* is staffed by a professional librarian and is one of five federal map depositories in Massachusetts. It is designed to meet the needs of the Clark community and area schools, housing over 50,000 sheet maps, atlases and controlled geographic materials.

Cross-disciplinary training, as evidenced by the four joint appointments held by geography faculty with other departments; the clustering of faculty research and teaching interests in several areas having to do with the man-environment system; and specialization in urban-economic, environmental management and behavior, international development, political, historical, cultural geography and geomorphology currently characterize the school.

PUBLICATIONS

A professional magazine, *Economic Geography,* is edited by a faculty member. Started at Clark University in 1925, it is the only journal published in English that specializes in economic and urban geography. The magazine has a world-wide distribution with a total circulation of about 5,000.

The graduate students, through the years, have maintained the Clark University Geographical Society (CUGS). The annual publication, *The Monadnock* keeps School of Geography alumni in touch with each other and with news and scholarly activites in the school.

COURSES

Courses are grouped according to various subfields and within subfields according to level. Courses offered in alternate or subsequent years are not listed, but can be found in the appropriate catalogue.

INTRODUCTORY GEOGRAPHY

001. TUTORIAL IN GEOGRAPHY.

An introductory tutorial for all geography majors offered over a 7-week module during the sophomore year. Includes discussion with faculty leader on nature of the field, writing of short papers, learning what a library and other information resources are for, exploring one topica theme.

Half course, Module 1.	Mr. Feldman.
Half course, Module 2.	Mr. Johnson.
Half course, Module 3.	Mr. Kasperson.
Half course, Module 4.	Mr. Lewis.

011. SURVEY OF GEOGRAPHY.

"Survey" provides a general framework for understanding modern geography. Emphasis is placed on the interrelation of various approaches to geographic researc as presently conducted in the Graduate School of Geography. Urban, physical, economic, political, social, cultural, historical and regional themes will be developed with approximately one-third of the lectures being given by various staff members. The course is designed primarily for freshmen and sophomores and is a required course for geography majors.

Full course, Modules 1-2.	Mr. Bowden, Staff.
Full course, Modules 3-4.	Mr. Johnson, Staff.

Other introductory courses are listed within the subfields.

ECONOMIC GEOGRAPHY

015. INTRODUCTION TO ECONOMIC GEOGRAPHY.

An introduction to economic geography including an outline and critique of theories of location and economic development.

Full course, Modules 3-4.	Mr. Peet.

125. DEVELOPMENT PROBLEMS.

The several dimensions of development and the reasons why the gap between developed and underdeveloped countries is widening will be explored. Among the disciplines drawn upon will be: geography, government, economics and education. Problems analyzed will include: urban growth, land reform, unemployment and government planning. Tanzania, China, Brazil and other countries will be used as cases. Listed jointly with History 288 and Government 125.

Full course, Modules 1-2.	Mr. Berry, Staff.

261. URBAN ECONOMIC GEOGRAPHY.

A systematic study of external and internal spatial relationships of cities and city systems. Urbanization viewed as a process in spatial organization involving mutual interrelations among decision units.

Full course, Modules 1-2.	Mr. Karaska.

265. REGIONAL SCIENCE.

The emphasis is on advanced location theory, methodology and models in the analysis of regional development.
Full course, Modules 3-4. Mr. Karaska.

268. MODELS IN INDUSTRIAL LOCATION SEMINAR.

Examination of traditional industrial location theory and consideration of recent developments in decision theory. Attention will be focused on empirical investigations of the Worcester region.
Full course, Modules 1-2. Mr. Karaska.

ENVIRONMENT

150. AQUARIUS: PLANNING FOR URBAN WATER RESOURCES.

Help wanted: Water resource planners for City of Aquarius to prepare 50-year plan for water supply, water quality, flood control and recreation. Includes opportunity to use advanced computer simulation. Group collaboration required.
Full course, Modules 3-4. Staff.

157. SPATIAL ASPECTS OF RESOURCE UTILIZATION.

Elementary theory of resources geography and economics. Problems of resource scarcity and economic growth, common property resources, location theory and resource utilization. Permission required for freshmen.
Full course, Modules 1-2. Mr. Feldman.

241. FOREST RESOURCE MANAGEMENT.

The elements of natural resource planning will be discussed. Students will be asked to develop a 50-year plan for timber and recreation for a small forest. (Same as Biology 295.)
Half course, Module 1. Mr. Howard.

257. SPATIAL ASPECTS OF RESOURCE UTILIZATION.

Advanced theory of resources geography and economics. Includes cost-benefit analysis and environmental impact statements, partial and general equilibrium models of pollution control.
Full course, Modules 3-4. Mr. Feldman.

260. POLITICS OF ENVIRONMENTAL MANAGEMENT.

This course involves case method analysis applied to fictional cases of decision-making on environmental issues. Students will be expected to "solve" the case problems and to defend their solutions. The cases are designed to illustrate the intertwining of environmental problems with political considerations. Particular attention is devoted to the value issues implicit in such decisions, the constraints upon different actors in the decision process, and the need for certain political skills. Cases are augmented by a reading period and guest speakers. Limited to 20 students.
Full course, Modules 3-4. Mr. Kasperson.

277. ENERGY SYSTEMS ANALYSIS.

The theoretical and practical discussion of the use of non-conventional energy alternatives and their interaction with present technology. Prerequisite: Geography 157 or permission of instructor.
Full course, Modules 1-2. Mr. Feldman.

357. REGIONAL WATER RESOURCES PLANNING.

The process of regional water resources planning is reviewed in the context of broad environmental concerns and is applied to an actual problem. Students working as a group select a region and prepare for that area a preliminary planning document that could be used as a guide for future detailed planning.
Full course, Modules 3-4. Mr. Schwarz.

359. MAN AND ENVIRONMENT THEORY: SOME PERSPECTIVES AND ISSUES.

Theories that seek to explain or prescribe the transactions between human beings and that which surrounds them are considered from the perspective of equilibrium, change and choice and through issues of man in or over nature, system stability and change, environmental free will and determinism, and societal uniformity and diversity. Prerequisite: previous experience with or exposure to environmental studies or issues.
Modules 1-2. Mr. Kates.

HISTORICAL/CULTURAL GEOGRAPHY

017. INTRODUCTION TO CULTURAL GEOGRAPHY.

The course is an ecological and historical approach to the study of cultures and culture change in a spatial context. A series of broad themes and problems are illustrated by case studies. Among the major themes to be considered are: adaption to environment, culture in prehistory, migration and the creation of culture areas, the world views of primitive, traditional and industrial cultures, culture landscape and the cultural geography of the United States. A schedule of three lectures and one discussion per week are integral parts of the course.
Full course, Modules 3-4. Mr. Bowden.

115. CULTURAL ECOLOGICAL SYSTEMS.

Investigates cultural adaptations to a variety of ecological settings. Selected case studies are used to illustrate systematic aspects of lifestyle adjustments in a number of the earth's major environmental regions.
Full course, Modules 1-2. Mr. Johnson.

220. SEMINAR ON LANDSCAPE.

An examination of the changing southern New England landscape as an example of general concepts. The landscape art of the early to mid-19th century, in conjunction with documentary and ecological data, forms the course focus. Projects and field trips included. Permission of instructors required.
Full course, Modules 3-4. Mr. Johnson, Mr. Kelsey.

253. HISTORICAL GEOGRAPHY OF NEW ENGLAND.

A combined seminar and field course leading to the identification of research problems in historical geography, including (but not limited to) the design of plates being produced in cooperation with the research staff of Old Sturbridge Village. Focus for Fall 1975 will be on the settlement pattern of rural New England and the functional structure of early Boston.
Full course, Modules 1-2. Mr. Bowden, Mr. Koelsch.

254. PROBLEMS IN HISTORICAL/CULTURAL GEOGRAPHY.

Individual and group research projects on themes varying each year with the interest of the instructor. For 1975-76, Mr. Koelsch will run a field and research course on the growth of Boston, emphasizing changing morphology and social geography, primarily during the 19th century.
Full course, Module 4. Mr. Koelsch.

255. HISTORICAL GEOSOPHY: IMAGES OF THE AMERICAN WEST.

A historical approach to the study of perception of regions, space and territory, landscape and physical environment with special emphasis on the American West 1800-1973. Emphasis will be on sources and techniques.
Full course, Modules 3-4. Mr. Bowden.

PHYSICAL GEOGRAPHY

014. INTRODUCTION TO PHYSICAL GEOGRAPHY.

A basic inquiry into components of geomorphology and climatology. The role of man as a critical agent in physical geography is included by looking at inadvertent climatic modification and alteration of the earth's surface by man's activities. Labs and field trip.
Full course, Modules 3-4. Mr. Schick.

114. DYNAMICS OF THE EARTH'S SURFACE.

An introduction to environmental systems; processes affecting the earth's surface, gravity, water, biotic, wind and man related. Erosional-depositional rates, their causes and their results.
Full course, Modules 1-2. Mr. Schick.

214. LANDSLIDE ASSESSMENT.

The integration of engineering, biotic, climatic and geologic inputs into an evaluation and prediction model of landslide susceptibility. Evaluation of on-going landslide susceptibility research in Western Pennsylvania and California will be the take-off point of the seminar. Permission of instructors required.
Modules 1-2. Mr. Howard, Mr. Lewis.

215. INTERMEDIATE FLUVIAL PROCESSES.

The focus will be on the relations between hydrology and geomorphology. The basic properties of hydraulic geometry, erosion and deposition will be explored. Prerequisite: Geography 114.
Full course, Modules 1-2. Mr. Schick.

227. LANDSCAPE ANALYSIS.

An analytical investigation of geomorphic process and resulting landforms utilizing remote sensing, field observations and contemporary research.
Full course, Modules 3-4. Mr. Schick.

242. PRINCIPLES OF BIOGEOGRAPHY.

The principles of biogeography are introduced. These include the study of the spatial distribution of plants and animals on a global scale. Man's impact on the distribution of vegetation is also considered.
Full course, Modules 1-2. Mr. Howard.

317. SEMINAR IN PHYSICAL GEOGRAPHY.

A research seminar dealing with contemporary themes in geomorphology. Permission of instructor required.
Full course, Modules 3-4. Mr. Lewis.

342. SEMINAR IN BIOGEOGRAPHY.

The purpose of the seminar is to define the description of biogeography in terms of current philosophy and research in the field. Readings and short papers will be assigned.
Full course, Modules 3-4. Mr. Howard.

POLITICAL GEOGRAPHY

130. REGIONAL POLITICAL GEOGRAPHY.

Concentrates on the impress of politics upon landscape in unique regional settings. Problem-oriented, within the context of world regional survey. Prerequisite: Geography 11 or Government 14.
Full course, Modules 3-4. Mr. Cohen.

230. POLITICAL GEOGRAPHY AND ITS SPATIAL CONSEQUENCES.

Theory and methodology in political geography. Political processes and landscape interaction, at varying levels of the political hierarchy (national, urban, international). Attention to such topics as equilibrium, systems, decision-making, political action space. Open to juniors and seniors. Prerequisite: Geography 11 or Government 14.
Full course, Modules 1-2. Mr. Cohen.

275. CITIZEN PARTICIPATION.

The purpose of this course will be: 1) to analyze major theories as to the causes and forms of participation in the polities; 2) to examine our understanding of participation in the context of alternative models (e.g., pluralist welfare state, elitist power structure, technological state) of the polity and; 3) to review the major means available to the powerless for utilizing participation as a means of creating power. Throughout, the course will establish an interplay between theoretical discussions of the nature of

articipation and a series of comparative analyses of case tudies of participation.
ull course, Modules 1-2. Mr. Kasperson.

30. SEMINAR IN POLITICAL GEOGRAPHY.

research topic will be handled by one or more teams vith research concentration on theory formulation and esting. Responsibility for supplementary undergraduate utorial sessions in connection with the sessions which re organized around the background and interests of eminar participants is included.
ull course, Modules 3-4. Mr. Cohen.

EGIONAL GEOGRAPHY

83. CARIBBEAN GEOGRAPHICAL PROBLEMS.

he evaluation of the region and its changing resource ase from the 1500's to the present. Particular emphasis vill be placed on the contemporary environment focusing n migration and economic change.
ull course, Modules 3-4. Mr. Lewis.

84. GEOGRAPHY OF THE MIDDLE EAST.

systematic approach to the geography of the Islamic ulture realm, the course also covers North Africa and the on-Arab states of Turkey and Iran. The modernization nd transformation of traditional patterns of livelihood nd lifestyle characteristic of the Middle Eastern cultural osaic comprises the focus of the course.
ull course, Modules 1-2. Mr. Johnson.

288. GEOGRAPHIC AND ENVIRONMENTAL PROBLEMS IN ISRAEL.

A problem-oriented course emphasizing the rural and urban settlement process in both historic and contemporary settings. Particular emphasis upon changing patterns and planning for the year 2,000.
Prerequisite: Geography 11.
Full course, Modules 1-2. Mr. Cohen.

READINGS, RESEARCH AND GENERAL

002. CAPSTONE SEMINAR IN GEOGRAPHY.

This seminar is for geography seniors and will be problem-oriented to produce an individual or team research product. It will use as its base a summary of the totality of each student's geography learning experience.

Half course, Module 1.	Mr. Chang
Half course, Module 2.	Mr. Peet.
Half course, Module 3.	Mr. Cohen.
Half course, Module 4.	Mr. Koelsch.

098. READINGS IN GEOGRAPHY.

Directed readings for undergraduates in an area of their choice. Consent of instructor required.
Variable credit.
Modules 1-2-3-4-5. Staff.

099. RESEARCH IN GEOGRAPHY.

Special research projects for undergraduates in an area of their choice. Consent of instructor required.
Variable credit.
Modules 1-2-3-4-5. Staff.

300. READINGS IN GEOGRAPHY.

Directed readings for graduate students in an area of their choice. Consent of instructor required.
Variable credit.
Modules 1-2-3-4-5. Staff.

301. RESEARCH IN GEOGRAPHY.

Research projects for graduate students leading, usually, to the dissertation proposal. Consent of instructor required.
Variable credit.
Modules 1-2-3-4-5. Staff.

368. PHILOSOPHY OF GEOGRAPHY.

Critical examination of some major themes and schools of geographic thought.
Full course, Modules 1-2. Ms. Buttimer.

396. APPROACHES TO GEOGRAPHY.

Paradigms, themes and models in geographic thought offered as part of the orientation program for entering graduate students. Includes field experience as a basis for identifying and validating existing problems.
Full course, Modules 1-2. Mr. Knos, Mr. Cohen.

SOCIAL GEOGRAPHY

161. GEOGRAPHY OF AMERICAN POVERTY.

Viewpoints on poverty — the culture of poverty versus Marxist interpretations. The geographic (environmental) theory of poverty, poverty in rural areas, rural to urban migration, ghetto formation, poverty in cities, antipoverty policy and planning will be discussed.
Full course, Modules 1-2. Mr. Peet.

171. SOCIAL GEOGRAPHY.

Life styles are examined in terms of man's relationship to his milieu in various contexts. Landscapes are seen as expressions of an on-going dialogue between man and nature, and students are encouraged to explore their own personal experiences of their own milieux. Prerequisite: Geography 11.
Full course, Modules 1-2. Ms. Buttimer, Ms. Martensson.

270. URBAN SOCIAL GEOGRAPHY.

An attempt is made to examine selected themes and research models concerning the experience of people in urban milieux. Among the perspectives are: 1) an ecological view which seeks to elucidate symbiotic relationships between population and milieux; 2) an intentional view which seeks to demonstrate the dominant role of purposeful activity and human motivations in

shaping behavior; and 3) a transactional view which explores the possibilities for engagement by actors in the process of spatial and environmental design. Prerequisite: Geography 11 and 261.
Full course, Modules 1-2. Ms. Buttimer.

274. UNDERGRADUATE SEMINAR IN MARXIST GEOGRAPHY.

Introduction to Marxism, critique of existing models in social and economic geography, center-periphery relationships, extraction of surplus value, imperialism and dependency. Prerequisite: Geography 161. Enrollment limited.
Full course, Modules 3-4. Mr. Peet.

276. DECENTRALIZATION.

Introduction to geographic thought on decentralization including a discussion of the principles of anarchism. Models of decentralization, such as workers' control. Utopian socialist models. Prerequisite: Geography 161. Enrollment limited.
Full course, Modules 3-4. Mr. Peet.

370. SEMINAR IN MARXIST GEOGRAPHY.

Group reading and discussion of Marxist theory leading to evolution of Marxist perspectives on the major fields of social and economic geography. Course includes reading *Capital* Volumes 1-3.
Full course, Modules 1-2. Mr. Peet.

373. SEMINAR IN TIME-SPACE GEOGRAPHY.

Seminar for advanced graduate students on the nature and application of the time-space model in a variety of contexts.
Full course, Modules 1-2. Ms. Buttimer, Ms. Martensson.

TEACHING AND LEARNING

203. STUDENT TEACHING.

An introduction to the construction and development of learning-teaching situations in geography. Required of all students in the history-geography *Teaching Cluster.* Two-course value.
Modules 3-4. Mr. Knos, Staff.

204. CURRICULUM DEVELOPMENT AND ANALYSIS.

A consideration of the assumptions about learning, teaching and knowledge which are incorporated in the full range of curriculum materials presently available for teaching geography and history. Each student will prepare a curriculum plan suitable to individual educational objectives for teaching history or geography. The course is required of all students in the history-geography *Teaching Cluster.*
Full course, Modules 1-2. Mr. Knos, Staff.

205.1. METHODS OF TEACHING AND RESEARCH IN EDUCATIONAL SYSTEMS.

An analysis of group and personal experiences of four components — spatial, social, political and psychological — which function in classrooms and which hinder or enhance learning. This course provides substantive input for the curriculum development course and is required of all students in the history-geography *Teaching Cluster.*
Full course, Modules 1-2. Mr. Knos, Staff.

205.2. EDUCATION AND GEOGRAPHY INTERNSHIP SEMINAR.

Full course, Modules 3-4. Mr. Knos, Staff.

206. AUTOBIOGRAPHY WORKSHOP.

A consideration of how students have learned in their own lives as a prerequisite to helping others to learn. The course seeks to engender an appreciation of both uniqueness and generalization in the process of teaching any social science discipline.
Half course, Modules 1-2. Mr. Knos, Staff.

209. SIMULATION AS A LEARNING DEVICE.

Designed to provide experience in the development of simulations to illustrate a variety of geographic concepts. Concepts will be defined; illustrations in the real world will be formulated and simulations of these situations will be developed.
Full course, Modules 3-4. Mr. Knos.

263. FUTURE WAYS OF KNOWING AND SURVIVAL.

A lecture and discussion course offered jointly by a geographer and a historian. Instructors alternate as lecturers; they will comment on each other's presentations and ideas, leading into class discussion. Students will write a variety of short papers and exercises and keep a journal of their changing reactions to the course and the subject. Instructors and students will review the possibilities and limitations of "future study," practice trend projections, systems simulation, scenario preparation, visioning and hopefully prepare a more positive and rational attitude toward the future. An upper division course with no prerequisites. Listed jointly with Department of History; Science, Technology & Society.
Full course, Modules 1-2. Mr. Kates, Mr. Von Laue.

TECHNIQUES IN GEOGRAPHY

110. INTRODUCTION TO STATISTICAL GEOGRAPHY.

Principles of inferential statistics will be introduced. These will include point estimation, internal estimation, sampling distributions, hypothesis testing and correlation techniques.
Full course, Modules 3-4. Mr. Feldman.

191. INTRODUCTION TO MAP MAKING AND CARTOGRAPHY.

An introduction to cartography and the mapping process with emphasis on problems of data collection, scale, compilation and selection of cartographic method. Fundamental aspects and use of major types of map projections and examination of transformations to non-geographic spaces (cartograms).
Full course, Modules 1-2. Mr. Chang.

193. CARTOGRAPHIC GENERALIZATION AND SYMBOLIZATION.

Two major topics in cartography will be covered in this course: 1) principles of generalization and their application to generalization of base map, point data, aerial data and landform representation; and 2) study of alternative solutions to symbolization of qualitative and quantitative data.
Full course, Modules 3-4. Mr. Chang.

212. COMPUTER PROGRAMMING.

Fundamentals of FORTRAN IV are presented. Designed for students with no mathematics beyond high school. Emphasis on numeric applications.
Full course, Modules 3-4. Mr. Howard.

247. QUANTITATIVE METHODS IN GEOGRAPHY.

A study of statistical methods and spatial statistics in geography. Topics will include estimation and hypothesis testing of simple and multiple regression and correlation, rank correlation, trend surface, nearest neighbor, quadrant analysis and methods on other selected problems. Canned computer programs will be used in case studies whenever possible. Prerequisite: introductory statistics.
Full course, Modules 3-4. Mr. Chang.

248. MODEL BUILDING TECHNIQUES.

The elements of deterministic and stochastic simulation techniques are introduced. In addition, linear and dynamic programming are introduced. A term project is required.
Full course, Modules 3-4. Mr. Howard.

291. BASIC MAP DESIGN.

The course is designed to study the major elements of map design: quantitative map symbols, map structure, the figure-ground relationship, lettering and the use of color. Prerequisite: introductory cartography.
Full course, Modules 1-2. Mr. Chang.

292. CARTOGRAPHIC TECHNIQUES.

Positive and negative artwork and basic photographic methods for map presentation.
Full course, Modules 3-4. Mr. Chang, Staff.

295. WORKSHOP IN MAP DESIGN AND PRODUCTION.

Selected problems involving 1) computer mapping, or 2) development and analysis of effectiveness of alternative solutions to mapping problems.
Full course, Modules 1-2. Mr. Chang.

392. AIR PHOTO INTERPRETATION.

Graduate students and advanced undergraduates majoring in Cartography may take this course with permission of instructor.
Half course, Modules 3-4. Mr. Berry, Staff.

URBAN GEOGRAPHY

262. WORKSHOP IN URBAN PROBLEMS.

Deals with the process of decision-making in placement of utilities in the urban landscape. A series of locational and developmental problems are posed for consideration within the context of a city.
Full course, Module 5. Mr. Knos.

361. SEMINAR IN URBAN ECONOMIC GEOGRAPHY.

Discussion, study and research on individual urban problems.
Full course, Modules 3-4. Mr. Karaska.

COURSES DIRECTLY RELATED TO GEOGRAPHY OFFERINGS

For descriptions and details, please refer to course listings within the departments.

Economics 228. Economics And Development.

Full course, Modules 3-4. Mr. Hsu.

Education 203. Student Teaching.

Two course value.
Modules 3-4. Mr. Knos, Mr. Schwartz.

Education 204. Curriculum Development And Analysis.

Full course, Modules 1-2. Mr. Knos, Mr. Schwartz.

Education 205.1. Methods Of Teaching And Research In Educational Systems.

Full course, Modules 1-2. Mr. Knos, Mr. Shwartz.

Education 205.2. Education And Geography Internship Seminar.

Full course, Modules 3-4. Mr. Knos, Mr. Schwartz.

Education 206. Autobiography Workshop.

Half course, Modules 1-2. Mr. Knos, Mr. Schwartz.

Education 217. Internship Teaching.

One and one-half course, Modules 3-4.
Mr. Knos, Mr. Schwartz.

Environmental Affairs 201. Application Of Systems Analyses To Environmental Problems.

Half course, Module 1. Mr. Schwarz.

Environmental Affairs 202. Biosphere.

Half course, Module 2. Mr. Reynolds.

Environmental Affairs 203. Man's Perception Of His Environment.

Half course, Module 3. Staff.

Environmental Affairs 204. Environmental Plans And Programs.

Half course, Module 4. Mr. Schwarz.

Environmental Affairs 210. Environmental Protection.

Full course, Modules 3-4. Staff.

Environmental Affairs 211. Water Reuse And The American City.

Full course, Modules 3-4. Mr. Kasperson, Mr. Reynolds, Mr. Schwarz.

Environmental Affairs 250. Practical Problems In Environmental Affairs.

Two course value.
Module 5. Mr. Schwarz, Staff.

Geology 011. Introduction To Geological Concepts.

Full course, Modules 1-2. Mr. Lewis, Ms. Rehmer.

Geology 171. Environmental Geology.

Full course, Modules 3-4. Mr. Lewis.

Government 103. Politics In The Developing Areas.

Full course, Modules 1-2. Mr. Marwah.

Government 167. Revolution And Political Violence.

Full course, Module 3. Ms. Schulz.

Government 233. Inequality And Political Development.

Full course, Module 4. Ms. Schulz.

History 285. Formal And Non-Formal Education As An Agent Of Social Change.

Full course, Module 5. Mr. Ford.

International Development 003. Rural Health Care And Nutrition In Developing Countries.

Full course, Module 5. Mr. Hays.

Science, Technology And Society 101/102. Introductory Case Studies.

Full course, Modules 1-2-3-4. Mr. Hohenemser, Staff.

Science, Technology and Society 201. Energy And Society.

Full course, Modules 3-4. Mr. McClintock.
Guest Lecturers.

Sociology 247. Urban Sociology.

Full course, Modules 1-2. Mr. Ross.

Geology

DEPARTMENT FACULTY

Rudolph F. Nunnemacher, Ph.D., Professor of Zoology
Laurence A. Lewis, Ph.D., Associate Professor of Geography
Judith Rehmer, M.A., Assistant Professor of Geology

A program in geology with a full-time geologist and the assistance of other faculty members has been reinstituted in the college for the academic year 1975-76. Course offerings in geomorphology are listed under physical geography.

While a major in geology is not currently available, students can plan a "self-designed major" which accomplishes the same purpose.

COURSES

11. INTRODUCTION TO PHYSICAL GEOLOGY.

The important geologic concepts needed to both understand our planet's structure and provide the foundation for advanced study in the geological sciences will be covered. Recent findings in geophysics, geochemisty, oceanography and space science will be related to the subject matter of classical geology. Lecture, lab.
Full course, Modules 1-2. Ms. Rehmer, Mr. Lewis.

12. HISTORICAL GEOLOGY.

The geologic history of continents, oceans and the evolution of life through the ages, with emphasis on the North-American continent.
Full course, Modules 3-4. Ms. Rehmer.

111. INTRODUCTORY MINERALOGY. *Offered alternate years.*

Study of crystallographic, physical and chemical properties of common minerals. Field trip. Laboratory. Prerequisite: Geology 11.
Full course. Ms. Rehmer.

131. STRUCTURAL GEOLOGY. *Offered alternate years.*

Analysis of rock deformation based on the principles of mechanics and the utilization of research data obtained from laboratory and field investigations. The principles of structural geology will be applied to the interpretation of major fold, fault and fracture systems of the earth. Prerequisite: Geology 11. Field trip. Laboratory.
Full course. Ms. Rehmer.

141. THE FOSSIL RECORD.

A systematic survey of the morphology, taxonomy and geologic history of groups of organisms commonly found as fossils. The techniques and principles used for interpreting the fossil communities in terms of age and environment will be discussed. Field trip. Laboratory.
Full course, Modules 3-4. Mr. Nunnemacher.

151. INTRODUCTORY FIELD METHODS.

A survey course in field geology. Includes introductory methods in topographic and structural mapping, hydrogeology and air photo interpretation. Numerous field excursions. Prerequisite: permission of professor.
Full course, Module 5. Ms. Rehmer, Mr. Lewis.

161. SPECIAL PROJECTS.

Selected research topics in geology. Prerequisite: permission of professor.
One course. Staff.

171. ENVIRONMENTAL GEOLOGY.

The application of geological specialties to environmental problems. Geologic processes, earth resources and engineering properties of rocks and surficial deposits as important to human activities will be emphasized. Prerequisite: Geology 11 or Geography 14. Lecture and discussion.
Full course, Modules 3-4. Mr. Lewis.

German

(See Department of Foreign Languages and Literatures.)

Government and International Relations

DEPARTMENT FACULTY

John C. Blydenburgh, Ph.D., Professor of Government and International Relations, Department Chairman
Morris H. Cohen, Ph.D., Professor of Government and International Relations; Representative, Washington Semester Program
Cynthia H. Enloe, Ph.D., Associate Professor of Government and International Relations; Director of the Graduate Program
Roger E. Kasperson, Ph.D., Associate Professor of Government and International Relations and Geography
Knud Rasmussen, Ph.D., Associate Professor of Government and International Relations, Head Tutor, The Tutorial Program
Sharon P. Krefetz, M.A., Assistant Professor of Government and International Relations, Director of Interdisciplinary Studies
Onkar S. Marwah, M.A., Assistant Professor of Government and International Relations
Ann T. Schulz, Ph.D., Visiting Associate Professor of Government and International Relations

ADJUNCT FACULTY

Saul B. Cohen, Ph.D., Professor of Geography, Director of the Graduate School of Geography and Adjunct Professor of Government and International Relations

PROFESSOR EMERITUS

Sherman S. Hayden, Ph.D., Professor of International Relations, Emeritus

UNDERGRADUATE PROGRAM

The major in the Department of Government and International Relations is intended to prepare undergraduates to enter a number of fields. The goal of the department is to produce persons skilled in analyzing — explaining, describing, predicting — the behavior of governments. This sort of analytical capacity is often particularly needed in the government as well as in sectors outside of it, e.g., in journalism, law, public interest organizations, business and, of course, in schools.

At the beginning of the sophomore year, every student concentrating in government should complete a Plan of Study (on a form provided by the department) with a selection of courses sufficient to meet the departmental requirements. This plan should be discussed with, and must be signed by, a faculty member representing the Government Department. The form should be returned to the department office by the beginning of November.

The Plan of Study is a preliminary statement of intent by the student and may be altered or amended after consultation with the advisor, provided the selection of courses satisfies the requirements of the department and the college.

Departmental Requirements: Nine full courses for the major; three full courses for the related field.

A) *Major:* One section of Government 103, Introduction to Political Investigation. These sections replace the Political Studies Seminars which are no longer offered. (Those students who have already taken one or more of the Political Studies Seminars will not be required to take the Introduction to Political Investigation as part of the departmental requirements.)

B) *Electives:* Eight additional courses in government are required with the student choosing among the following fields:

Political Theory
American Government and Politics
International Politics and Foreign Policy
Comparative Politics and Area Studies
Self-designed (by student and faculty advisor)
Tutorials
Honors Program

Note: Tutorial in Political Science (for sophomores and juniors): Designed as an intensive study group, each program will be tailored to individual interests and needs. Emphasis will be placed upon the examination of established theories, development of propositions about political phenomena and application of both to concrete cases for discussion. Approximately 25 pages of written work will be required and, at the end of the tutorial, students will receive a grade.

Related Field

Three full courses in any other social science.

HONORS PROGRAM

The honors program in Government and International Relations is a two-year program, consistent with university guidelines for honors programs as described in the *Clark University Bulletin.* The junior year consists of independent research under the guidance of a faculty supervisor. In the senior year, the honors candidate will write a thesis, this being the substance of the program. Honors work affords majors a unique opportunity to pursue prolonged research in an area of their choice. Successful completion of the program leads to, among other awards, graduation with honors in Government and International Relations.

Government majors interested in the program should apply in the last semester of the sophomore year or in the first two weeks of the junior year. Provisions have been made for Washington Semester and Junior Year Abroad programs to mesh with this application date. To apply to the program, government majors should:

1) Write a letter to the department chairman, proposing an independent project for the spring semester of the junior year and indicate an interest in eventually writing a senior thesis.

2) Submit a grade transcript.

3) Submit a letter of recommendation from a faculty member. Students admitted to the honors program will be notified in September of their junior year. Transfer students, juniors and seniors applying for admission must follow the same procedure. In addition thereto, they must submit written work which reflects their ability to write a senior thesis. All questions should be referred to the department chairman, Room 304, Academic Center.

Special programs in the department include the Sherman S. Hayden Seminar in International Affairs, the Washington Semester Program under the auspices of the American University in Washington, D.C., opportunities to serve on the editorial board of the *Student Journal of Politics* and the Sister Universities Exchange Programs.

GRADUATE PROGRAM

The department offers a program leading to the Master of Arts degree in Government or International Relations. It is expected to be of one year's duration, with a student finishing at the end of either the fourth or fifth module. The requirements are essentially those of the university as stated in the Graduate School section of the *Bulletin* and include the department's graduate research methods seminar plus other courses of the student's choice in the Department of Government and International Relations or in other social science departments. A final oral examination and a master's thesis, which may develop out of a research seminar paper, are also required

Students enrolled in this program will be prepared for career opportunities in teaching, journalism, local and national government administration, public interest organizing, international assistance and Ph.D. study. Some tuition scholarships plus a limited number of teaching assistantships which carry stipends up to $2,800, depending on time and duties involved, are available.

The degree of Doctor of Philosophy is being held in abeyance at the present time. The present program will facilitate the transition to advanced work elsewhere, whether within or without a university.

COURSES

103.3. INTRODUCTION TO POLITICAL INVESTIGATION: DEMOCRACY, DISOBEDIENCE AND DISSENT.

A section of the new political investigations course. This particular section will focus upon theories of democracy and the role which disobedience and dissent can play within a democratic society. Examples will be drawn from historical examples in American experience. Limit 30-35.
Full course, Modules 1-2. Mr. Kasperson.

103.1. INTRODUCTION TO POLITICAL INVESTIGATION: POLITICAL ANALYSIS.

This course will seek to develop a general understanding of political science. It will focus on various ways of studying the body politic from a methodological perspective and deal with both micro and macro political analysis. Although not exclusively Western in orientation, the major cross-national illustrations will be drawn from the Western political systems. Limit 30-35.
Full course, Modules 1-2. Mr. Rasmussen.

103.2. INTRODUCTION TO POLITICAL INVESTIGATION: POLITICS IN THE DEVELOPING AREAS.

An introduction to the variety of political systems and behavior in the non-Western nations of the world. The course will consider typologies of political form, patterns and institutions of power allocation within societies, the bases of ideological inspiration and methods by which the Third World can be differentiated from the Western or socialist worlds. Limit 30-35.
Full course, Modules 1-2. Mr. Marwah.

103.4. INTRODUCTION TO POLITICAL INVESTIGATIONS: AMERICAN POLITICAL BEHAVIOR.

An investigation of politics course focusing on American political behavior. In addition to examining several basic concepts, e.g., power, authority, legitimacy, the processes of political socialization and political participation will be considered. Limit 30-35.
Full course, Modules 3-4. Ms. Krefetz.

103.5. INTRODUCTION TO POLITICAL INVESTIGATIONS: POLITICS OF THE DEVELOPING AREAS.

Non-Western politics: nation-building and new states, political conflict, political parties in single party regimes, political change at the grass-roots. Limit 30-35.
Full course, Modules 3-4. Ms. Schulz.

106. COMPARATIVE POLITICAL SYSTEMS.

The course approaches the pitfalls and rewards of comparative analysis from three directions. First, we will concentrate on a single foreign political system in all its complexity (e.g., Britain, Mexico, Japan, etc.) Second, we will look at one political issue (e.g., pollution, crime, land reform) to see how several different countries cope with demands. Finally, we will examine one concept used by political scientists to compare political systems (e.g., recruitment, ideology, etc.). Open to majors and non-majors.
Full course, Modules 1-2. Ms. Enloe.

Geography 125. DEVELOPMENT PROBLEMS.

Refer to course description under Geography.
Mr. Berry, Coordinator; Ms. Enloe, others.

Geography 130. REGIONAL POLITICAL GEOGRAPHY.

Refer to course description under Geography.
Mr. Cohen.

150. INTRODUCTION TO AMERICAN GOVERNMENT.

An introductory study of the processes and efficacy of the American governmental system. Primarily devoted to an overview of contemporary aspects of the national government, the course includes problems of federalism, salient civil liberties issues, and the roles of Congress, the President, the Supreme Court and political parties in the decision-making process.
Full course, Modules 1-2. Mr. Cohen.

167. REVOLUTION AND POLITICAL VIOLENCE.

Seminar. The roots of political violence and revolution — social change, political legitimacy and individual psychology. Specific revolutions studied through the writing of participants, popular writers and political analysts. External intervention in domestic rebellions. Limit 25.
Full course, Module 3. Ms. Schulz.

169. INTRODUCTION TO INTERNATIONAL RELATIONS.

This course will seek to develop a general understanding of international relations study. It will focus on problems of conceptualizing the international system, issues of theoretical inquiry and the interaction of states in analytical rather than topical form. Current international situations will be drawn upon to illustrate the complexity of interstate relationships, and to emphasize that conflict and cooperation coexist. Limited.
Full course, Modules 1-2. Mr. Marwah.

196. CONTEMPORARY INTERNATIONAL POLITICS.

Not offered, 1975-76.

The interactions of Superstates, Middlestates and Smallstates; International Politics vs. International Society, i.e., the ambivalent roles/needs of: Nation and World, War and Peace, Power and Weakness, Prosperity and Poverty, Freedom and Oppression, Perception and Illusion, Activity and Apathy, Revolution and Stability, Identity and Transformation; Cooperation and Conflict as the ongoing process of inter-state relations.
Full course. Mr. Marwah.

204. SEMINAR IN AMERICAN PRESIDENCY.

A study of the Constitutional and other powers and functions of the President and the Presidency via selected readings and individual research.
Full course, Modules 3-4. Mr. Cohen.

205.1. ROOTS OF POLITICAL THOUGHT.

A study of the development of Western political thought from the Socratic philosophies to Hobbes. The study will deal with the evolution of political thought in the context of influential, social, political and economic forces.
Full course, Modules 1-2. Mr. Rasmussen.

205.2. RECENT POLITICAL THEORY.

A study of modern political theory as developed in the context of the social, political and economic forces which have shaped Western thought since the French Revolution.
Full course, Modules 3-4. Mr. Rasmussen.

207. BLACK POLITICAL THOUGHT. *Not offered, 1975-76.*

A study tracing a conscious development within the black community starting from the slave society and moving to the present. In the process, three lines of thought are developed: a) the political thought of accommodation, b) the political thought of protest and c) the political thought of revolutionary confrontation. Permission of instructor required.
Full course. Mr. Rasmussen.

209. COMPARATIVE GOVERNMENT.

A comparative study of the major West European political systems. Study of the political historic development will lay the basis for comparison of modern functions of

government. Stress is placed on political socialization and its importance for comparative politics.
Full course, Modules 3-4. Mr. Rasmussen.

Environmental Affairs 211. WATER REUSE AND THE AMERICAN CITY.

Refer to course description under Environmental Affairs.
Mr. Kasperson, Mr. Reynolds, Mr. Schwarz.

219. WOMEN AND POLITICS.

An exploration of the political behavior of American women and the factors which condition their behavior, including: socialization and learning of sex roles, social background and life situation variables and historical arrangements of political institutions. Among the questions to be considered are: Why are women generally less interested, less active and less efficacious politically than men are? What are the characteristics of those women who do engage in political activity? What is the likely impact of the Women's Liberation Movement and women's issues such as abortion on the future behavior of women in politics? Special attention will be given to a consideration of conditions which facilitate or impede the recruitment of women to local political office, and students will conduct original research on women in politics in several New England cities, including Worcester. Prerequisite: One previous government course. Limit 15.
Full course, Modules 3-4. Ms. Krefetz.

220. URBAN GOVERNMENT AND POLITICS.

The primary focus of this course is on the various socio-economic and political inputs that affect the functioning of American urban political systems. What are the resources and constraints which the inputs place upon and provide for the decision makers? Topics to be discussed include: the social, economic and political nature of the city, the effects of the state and federal governments, relations between city and suburb, political structures and styles, the distribution of power and race, ethnicity and ethos theory. In the latter part of the course, some attention will be given to differences in urban policy outputs, primarily in the fields of education and welfare. Where relevant, differences and similarities in the politics of urban areas outside the United States will be considered. Open to sophomores, juniors and seniors.
Full course, Modules 1-2. Ms. Krefetz.

221. SUBURBIA: PEOPLE AND POLITICS.

Not offered, 1975-76.

The growth of suburbs in the United States since the end of World War II has had considerable impact upon the nature of our metropolitan areas. Why has this growth occurred? What are the characteristics of the people who live in suburbs? Is suburban homogeneity a myth or reality? How are suburbs governed? What is political participation like? What sorts of issues are important to suburbanites? Is there a national suburban policy? Ought there to be one? These are the major questions to be explored in this course. Open to sophomores, juniors and seniors.
Full course. Ms. Krefetz.

222. SEMINAR: PUBLIC POLICIES AND AMERICAN CITIES.

What difference does it make "who governs"? What sorts of variations are there among cities in their policy outputs in such areas as welfare, education, poverty, health, the police and the criminal courts, and what accounts for the differences? After a critical review of the existing literature, research will be conducted on a policy area of the student's choosing in Worcester and/or other cities.
Studies on Urban Public Policy.
Prerequisite: Gov. 220 or permission of the instructor. Limit 15.
Half course, Module 3. Ms. Krefetz.
Field Research on an Urban Problem.
Prerequisite: Module 3, Gov. 222. Limit 15.
Half course, Module 4. Ms. Krefetz.

225. POLITICS OF BUREAUCRACIES.

Bureaucrats are among the most neglected — and influential — actors in contemporary politics. This course will examine the dynamics of bureaucratic politics in the U.S., with a special concern for federal level departments. Some of the questions to be pursued are: How much control does the White House exercise over federal agencies? Has "Watergate" had a lasting impact on bureaucratic operations? Why are some departments, such as Treasury and Defense, so much more influential in bureaucratic competition than others? How do bureacrats cultivate their own clienteles? Open to majors and non-majors. Some previous courses in government will be helpful.
Full course, Module 5. Ms. Enloe.

226. GOVERNMENT AND POLITICS OF THE MIDDLE EAST.

Not offered, 1975-76.

The first module will cover political change within Middle Eastern countries from Egypt to Afganistan. The approach will be a topical one, focusing upon the social bases of politics, styles of political competition and leadership recruitment and the relationship between political and economic life. The second module will be devoted to international politics in the Middle East — especially the Arab-Israeli conflict, the Persian Gulf and the issue of international integration in the Arab world.
Full course. Ms. Schulz.

227. INEQUALITY AND POLITICAL DEVELOPMENT.

Not offered, 1975-76.

This seminar will examine the relationship between political development and political, social and economic inequality in the Third World. The effects of the single-party state, of attempts at nation-building and of government-directed reform upon the distribution of status, influence and material goods will be explored. Readings will be interdisciplinary.
Full course. Ms. Schulz.

228. SEMINAR IN COMPARATIVE POLITICS: POLITICAL REPRESENTATION. *Not offered, 1975-76.*

This seminar will focus upon political representation in theory and practice. The basic theoretical question to be explored is which human characteristics ought to be represented by political leaders — geographic, occupational, idealogical, etc.? Empirically, what is the process through which these characteristics achieve representation in various types of political systems?
Full course. Ms. Schulz.

Geography 230. POLITICAL GEOGRAPHY AND ITS SPATIAL CONSEQUENCES.

Refer to course description under Geography.
Mr. Cohen.

232. POLITICAL THEORISTS AT WORK: HANNAH ARENDT.

Under the Government Department's "Expanded Major" (not in effect until 1976-77), this course will be one of several titled "Political Theorists at Work" that will be required for majors. Each such course will focus on a single political thinker whose work has influenced the way we conceive of governance and the state. Majors must take only one in the series. Hannah Arendt's work spans the rise of Hitler and the post-war emergence of mass politics. She had been the foremost theorist dealing with the nature of totalitarianism. Among the works of Arendt's that will be read are *Eichmann in Jerusalem, The Origins of Totalitarianism, On Revolution.* Open to majors and non-majors. Previous courses in government, philosophy, intellectual history or social theory encouraged.
Full course, Module 4. Ms. Enloe.

233. INEQUALITY AND POLITICAL DEVELOPMENT.

Seminar. Social inequality, income distribution and political change. The political economy of modernization through studies of international capital relations, state socialism and subsistence agricultural economies. Redistribution policies and political conflict. Limit 20.
Full course, Module 4. Ms. Schulz.

234. THE ARAB-ISRAELI CONFLICT.

The historical background of the Arab-Israeli conflict, external involvement in the area, military outcomes and negotiating strategies. Israeli and Arab state foreign policies, Palestinian nationalism and the United Nations. Weapons flows and strategies.
Full course, Modules 1-2. Ms. Schulz.

238. SEMINAR: TRANSNATIONAL PERSPECTIVES IN INTERNATIONAL RELATIONS. *Not offered, 1975-76.*

Focusing 'Beyond the Nation State' in a world of Nations; Plebians and Patricians in a spatially-divided world; the geography and economics of international needs; apportioning limited world resources, the environment, and technological growth; the role of International Organizations; contemporaneous strategies of waging peace, i.e., Arms Control and Disarmament approaches, International Security Systems, Alliance Formations, Utopian and Realist efforts.
Full course. Mr. Marwah.

239. THE UNITED STATES IN WORLD AFFAIRS.
Not offered, 1975-76.

The 'First New Nation'; the stages of role-change from Small Power to Super Power; American Nationalism and Internationalism; insular Republic and Global Actor; the American Paradigm and American Power for Other States in the twentieth century; Conflictual Interests; the Strategic Interaction of American and Soviet Ideologies in the post-War world; the parallel demand for humanism and real-politik in American foreign policy.
Full course. Mr. Marwah.

251. AMERICAN POLITICAL PARTIES AND PRESSURE GROUPS. *Not offered, 1975-76.*

A study of the structure and functioning of the American party system and the role of selected interest groups in American politics including some ethnic and economic influences. Special emphasis is placed on the processes and problems involved in the nomination and election of the President. Prerequisite: American Government desirable but not required.
Full course. Mr. Cohen.

254a, b. AMERICAN CONSTITUTIONAL LAW.

A study of the major developments and problems of American Constitutional law and judicial behavior approached primarily by analysis of court cases. Government 254b explores the area of civil liberties and includes such issues as freedom of speech, press, and religion, civil rights and selected aspects of the rights of a person accused of crime. Emphasis is placed on recent and contemporary developments and on class discussion. Permission of instructor required.
254a.
Full course, Modules 1-2.
254b.
Full course, Modules 3-4. Mr. Cohen.

255. SEMINAR IN THE LEGISLATIVE PROCESS.
Not offered, 1975-76.

A study of policy making in Congress, involving problems of legislative organization and procedure, leadership and presidential legislative relationships, examined primarily by the case method and by individual research on particular pieces of recent legislation. Permission of instructor required. Limit 10.
Full course. Mr. Cohen.

260. POLITICS OF ENVIRONMENTAL MANAGEMENT.

This course involves case method analysis applied to fictional cases of decision-making on environmental issues. Students will be expected to "solve" the case problems and to defend their solutions. The cases are

designed to illustrate the intertwining of environmental problems with political considerations. Particular attention is devoted to the value issues implicit in such decisions, the constraints upon different actors in the decision process and the need for certain political skills. Cases are augmented by a reading period and guest speakers. Limit 20.
Full course, Modules 3-4. Mr. Kasperson.

264. "STATES AND STRATEGIES IN THE INDIAN OCEAN REGION."

Understanding the strategic interaction of great, middle and small powers in the western half of the Indian Ocean and the land territory of West Asia-Northeast Africa. The course will evaluate tensions and conflicts developing in the area over land or crucial raw materials and their impact on the international system. Prerequisite: upper division students with background in international relations. Limit 15.
Full course, Modules 1-2. Mr. Marwah, Ms. Schulz.

265. POLITICS OF JAPAN.

Japan is considered today one of the world's four great powers. Yet its internal political dynamics are not widely understood by Americans. This course will explore the major factors that have shaped Japanese politics and government policies since 1945. Among the topics that will be analyzed are: the group loyalties of Japanese; the factional rivalries within major parties; the influence of bureaucrats; the ambivalence that plagues Japan's foreign relations. The course is open to majors and non-majors. Those interested in pre-1945 Japan are urged to take the course offered in History. Some previous courses either in government or in Asian studies are helpful.
Full course, Modules 1-2. Ms. Enloe.

Geography 275. CITIZEN PARTICIPATION.

Refer to course description under Geography.
Mr. Kasperson.

278. NUCLEAR ENERGY POLITICS.

A government seminar devoted to decision-making and national policy on nuclear energy, with particular reference to safety issues. Prerequisite: consent of the instructor. Limit 10.
Full course, Modules 1-2. Mr. Kasperson.

291. THE POLITICAL ECONOMICS OF CHINA AND INDIA.

Seminar on changing Man and Society in two large non-Western environments: developing frameworks of analysis for comparison and contrast between China and India, and thereafter, with Western models of society. Prerequisites: upper division students with some background in economics and history. Limit 15.
Full course, Modules 3-4. Mr. Marwah.

292. NUCLEAR WEAPONS POLITICS.

Seminar on the international political effects of the sprea of nuclear weapons and technology; how nations may cope with the Janus-face of the new sciences as they affect the bases of power and influence. Prerequisites: upper division students with background in international relations. Limit 15.
Full course, Modules 3-4. Mr. Marwah.

293. POLITICAL CAMPAIGNING.

This course will consist of two parts: a field experience and a review of descriptive and theoretical literature on political campaigns. The field experience will consist of student participation in a local political campaign or in th local component of a larger campaign. Classroom work will cover uses of media in campaigns; the role of issues and candidates; political organization; and the problems of resource allocation.
Full course, Modules 1-2. Mr. Blydenburgh.

294. ELECTORAL BEHAVIOR.

Contemporary studies of voting behavior will be used to explore the meaning of elections as the linkage between government and citizenry. The course will address the questions of who votes and why, and it will aim to identify and explain long term trends in elections by focusing on the theory, methods and data of recent political research.
Full course, Modules 1-2. Mr. Blydenburgh.

295. ECONOMIC THEORIES OF POLITICS.

This course will review some important recent political theories which make use of economic concepts in attempting to explain political phenomena. Emphasis will be placed on evaluating the theory in terms of its success in accounting for established empirical propositions as well as its prescriptive uses and normative implications. Some of the subjects covered will be a general theory of representative government, a theory of the organization and formation of groups and some theories of voting systems.
Full course, Modules 3-4. Mr. Blydenburgh.

298. APPLICATIONS OF GAME THEORY TO POLITICS.

After covering the basic concepts of game theory, the course will pursue applications to a variety of classes of political conflict; to strategy in international relations; to political campaign decision-making and to theories of the formation of political coalitions.
Full course, Modules 3-4. Mr. Blydenburgh.

299. PARADOXES OF POLITICS.

This course will focus on what, at first blush, seem to be logical inconsistencies — political phenomena or propositions about politics which are beyond the limits of common sense. We will explore the empirical and normative implications of these paradoxes, showing their real world significance and how some are, in fact, resolved

in the political system while proposed "solutions" to others will be reviewed.
Full course, Module 5. Mr. Blydenburgh.

297. HONORS IN GOVERNMENT AND INTERNATIONAL RELATIONS.

Variable credit.
Modules 1-2, 3-4. Staff.

370. POLITICAL SCIENCE RESEARCH: TECHNIQUES AND METHODS.

The major concern of the seminar will be with gaining an understanding of those social science techniques and methods which are most appropriate to conducting political science research. The course will begin with consideration of how one develops a research design, generates hypotheses and builds theories. General topics to be discussed include causal thinking, the notion of controls and the concepts of validity and reliability. Specific topics will include survey research, aggregate analysis, content analysis, simulation, correlation and regression analysis and factor analysis. In addition, special attention will be given to problems involved with doing cross-cultural research and analyses through time. Open to graduate students and, with permission of the instructor, advanced undergraduates.
Full course, Modules 1-2. Ms. Krefetz.

READINGS, RESEARCH AND THESIS COURSES

87. THE TUTORIAL PROGRAM.

Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

88. DIRECTED READINGS.

Variable credit.
Modules 1-2, 3-4. Staff.

89. SPECIAL PROJECTS.

Variable credit.
Modules 1-2, 3-4. Staff.

360. GRADUATE READINGS COURSES.

Variable credit.
Modules 1-2, 3-4. Staff.

361. GRADUATE THESIS COURSE.

Variable credit.
Modules 1-2, 3-4. Staff.

Hebrew

(See Department of Foreign Languages and Literatures.)

History

DEPARTMENT FACULTY

Robert F. Campbell, Ph.D., Professor of American History, Department Chairman
George A. Billias, Ph.D., Professor of American History*
Theodore H. Von Laue, Ph.D., Jacob and Frances Hiatt Professor of European History
Daniel R. Borg, Ph.D., Associate Professor of European History
Richard B. Ford, Ph.D., Associate Professor of Comparative History****
Ronald P. Formisano, Ph.D., Associate Professor of American History
Tamara K. Hareven, Ph.D., Associate Professor of American History***
Paul Lucas, Ph.D., Associate Professor of European History**
Jonathan K. Ocko, M.A., Assistant Professor of Asian History
Rodger D. Parker, M.A., Visiting Assistant Professor of American History
William Koelsch, Ph.D., Associate Professor of Geography and History in the Graduate School of Geography; Adjunct Associate Professor in the Department of History, and University Archivist
Thomas C. Barrow, Ph.D., Professor of American History (Affiliate)
Marcus A. McCorison, M.S., Lecturer in American History, Director of the American Antiquarian Society
Michael Sokal, Ph.D., Associate Professor of History of Science and Technology (Affiliate)

PROFESSOR EMERITUS IN RESIDENCE

Dwight E. Lee, Ph.D., Jacob and Frances Hiatt Professor of European History, Emeritus

PART-TIME INSTRUCTORS

Herbert Rosenblum, Ph.D., Visiting Lecturer in Jewish History
Lori T. Toepel, Ph.D., Visiting Assistant Professor of Classics
Martha Tolpin, Ph.D., Visiting Lecturer in European History
J. Michael Turner, Ph.D., Visiting Lecturer in History

On leave of absence, 1975-76:
**Modules 1-2*
***Modules 1-4*
****Modules 3-4*
*****Modules 1, 3-4*

UNDERGRADUATE PROGRAM

Undergraduate Major: A student majoring in history takes 9 courses of history. Of the advanced (200 level) history courses in a major's program, at least two courses must be in American history and another two courses in non-American history. An additional three courses must be taken in economics, geography, government, psychology or sociology (as related fields).

The department recommends, though it does not require, that its undergraduate majors attain proficiency in at least one modern foreign language. Students planning to go on to graduate school are advised that demonstration of competence in one or more appropriate foreign languages is an important consideration in the admissions and fellowship award process of most leading universities. Students should also note that a knowledge of statistics and computer usage is highly desirable for advanced work in history.

Special Programs: Majors in history are encouraged to plan, in consultation with their advisors, a coherent program of study. Special attention should be paid to opportunities for interdisciplinary programs. Students should also explore opportunities under the new program being prepared for the Extended History Major in the projected University College. That program envisages interdisciplinary "tracks" of concentration in American, European, Russian, East Asian and African history, with additional options for specialized interests within each of these tracks.

Whatever special program the student chooses to pursue, the department recommends (but does not require) that he or she submit to the faculty advisor in writing a statement of the program's purpose together with a tentative list of courses.

Students may extend the scope of their undergraduate programs through the offerings of cooperative colleges in Worcester, by independent study and research, and in the honors program in history. Further information about these matters is available from the department chairman or other members of the department. See also the *Note* under *COURSES* below.

GRADUATE PROGRAM

The areas of graduate study at Clark are American history and modern European history, with select non-western history as supporting fields. Emphasis is placed on American history because of the department's affiliation with the American Antiquarian Society, which provides graduate students with the facilities of one of the country's finest research libraries, with over 750,000 volumes and many valuable manuscripts relating to early American history down to 1876. A dozen smaller libraries in Worcester, with combined holdings of over a million volumes, further extend the resources of the Clark library, as does easy access to Boston, Providence and New Haven area research facilities.

The department offers graduate work in the form of reading seminars (colloquia), research seminars and individual tutorials for both reading and research purposes. First and second year students take three courses each semester (a semester equals two modules); one of these courses must be expressly devoted to research for the purpose of producing a substantial research paper. Beyond their research seminar, students fill out their program by taking colloquia, additional research seminars, and upper-division undergraduate courses. The chairman assigns incoming graduate students to faculty advisors, who help design their programs. With the permission of the advisor, a student is encouraged to take suitable courses in other departments or Consortium colleges.

Master of Arts: The department enrolls a limited number of terminal master's candidates and awards the degree to students who have completed the work of eight courses and a one-year residence requirement; have 1) either submitted two substantial research papers prepared in two seminars which are jointly equivalent to the master's thesis, or 2) submitted a master's thesis; and have passed the required oral examination.

Ph.D. candidates who have passed their preliminary examination, whether or not they will continue with a dissertation, may also receive the degree of Master of Arts.

DOCTOR OF PHILOSOPHY

The traditional doctoral program is designed to enable students to master the discipline of history through research, reading and teaching. In addition to meeting the seminar and course requirements outlined above, a student who enters without an M.A. degree must spend at least three years in full-time residence at Clark, satisfy the language requirement, gain some experience in college teaching, pass the preliminary examination and write a doctoral dissertation within seven years of matriculation.

Language Requirement: Students concentrating in American and British history must pass an examination in one foreign language: French, German, Spanish or Russian. Students concentrating in American history may substitute a program in quantitative techniques or computer science for a foreign language. Those specializing in European history must pass examinations in two foreign languages, normally French and German. The chairman will designate an examiner in each language, who will determine whether the student is proficient enough to use the language as a research tool. An entering student must take a language examination as soon as it is offered in his first semester of residence, and must have passed this examination by the end of the first calendar year of residence in order to register for his second year. If required, the second language examination should be attempted early in the second year and must be completed before the student registers for his third year. All language requirements must be satisfied before the preliminary oral examination can be scheduled.

Teaching Experience: Some teaching experience at the college level is a prerequisite of the Ph.D. degree. Students normally meet this requirement in their second or third years as teaching assistants.

Fields: Soon after arriving at Clark, the student, in cooperation with his advisor, defines four fields and prepares for them in whatever ways seem appropriate in view of his background and interests. Students specializing in American history normally offer the full scope of American history as two fields. Those concentrating in non-American history normally offer one American field (the dividing line between the two American fields generally falls at 1815). Any student may offer a non-historical subject as a field, usually within the social sciences, or prepare an interdisciplinary field.

Preliminary Examination: One of the four fields must be offered for oral examination at the end of the student's first year. Prior to taking the oral, the student must submit two research papers completed in his first year. The remaining three fields will be examined, again orally, at the beginning of the student's third year. The combined oral examinations constitute the "preliminary examination" required by the Graduate Board. Students who have passed their preliminary examinations may, upon request, receive the degree of Master of Arts.

Dissertation: Students are advised to consider and explore dissertation topics during their years of residence and to choose a possible dissertation advisor as soon as possible. The process of writing a dissertation is outlined in a brochure, "Dissertation S.O.P.," which may be obtained from the department secretary.

Deadline for Completion: All work required for the doctor's degree must be completed within a seven-year period after matriculation. In unusual circumstances only, such as involuntary military service or extended illness, the department may grant a specified extension of time.

Note: The course offerings below do not include courses that may be taken through the Consortium of colleges in the Worcester area. The department recommends especially that students consider courses at Holy Cross in medieval, Renaissance and Reformation, and Latin American history.

COURSES

NOTE: Undergraduate courses are of two types: 1) designed for freshmen and numbered 100-199, and 2) advanced courses numbered 200-299. The latter carry no prerequisite (unless especially noted) and are open to qualified freshmen without the consent of the instructor. In case of doubt, freshmen should consult their advisor and the instructor. The term "proseminar" indicates courses of limited enrollment which combine reading, discussion and written reports or term papers.

COURSES FOR FRESHMEN

110. INTRODUCTION TO HISTORY.

Introduction to basic problems of historical method and explanation. Historical knowledge begins with self-knowledge in time as well as with thought about how we know and what we know. Students will compare causes of individual changes over time in identity and socialization (through autobiographies and family histories) with causes of historical change in larger social and political groups.
Full course, Modules 1-2. Mr. Ford, Mr. Formisano.

114. CHINA TO 1644. *Not offered, 1975-76.*

Lecture and discussion course on pre-modern Chinese civilization. Topics to be covered in classical and developed Confucianism and Taoism, the impact of Buddhist penetration of China, traditional artistic and literary forms, the development of Imperial China's political structure, and "barbarian" influences on China. Films and at least one museum visit will be an integral part of the course.
Full course. Mr. Ocko.

115. CHINA 1644-PRESENT.

Thematic discussion of the last imperial dynasty, its breakdown, the search for and establishment of a new order. Films and a simulation game will be an integral part of the course. This is an indivisible two module course for which no previous work in Chinese history is required. Students completing this course are encouraged to follow it up with Govt. 291., Political Economies of China and India, Mod. 3-4.
Full course, Modules 1-2. Mr. Ocko.

120. PRO-SEMINAR: ORIGINS OF CONTEMPORARY AMERICAN THEMES.

Readings, discussion and reports dealing with the historical background and contemporary relevance of such political and social issues as the nature of the Presidency, race relations, violence and non-violence, environmental concerns and the government and economic life.
Full course, Modules 3-4. Mr. Campbell.

140. HISTORY OF EUROPE FROM THE "FALL" OF ROME TO THE PRESENT. *Not offered, 1975-76.*

A lecture course intended to familiarize would-be majors in history, as well as non-majors, with the basic outlines of the development of Western society.
Full course. Mr. Lucas.

180. TRADITIONAL AFRICA. *Not offered, 1975-76.*

The development of several pre-European civilizations in Africa, including those of Kush, the Sudanic Kingdoms, the Zanj, Zimbabwe and Nok-Ife-Benin. An anthropological approach will be used to explore traditional African society and values.
Full course. Mr. Ford.

181. MODERN AFRICA. *Not offered, 1975-76.*

A study of the impact of Europe on Africa. Topics include the formal European penetration of Africa including slavery and the slave trade, exploration, missionary activities, imperialism, and eventually, independence. Three main themes will serve as organizing forces for the course: social change; economic change; political change.
Full course. Mr. Ford.

AMERICAN HISTORY - PERIOD COURSES

120. ORIGINS OF CONTEMPORARY AMERICAN THEMES.

(See description under *Courses for Freshmen.*)
Mr. Campbell.

201. AMERICA'S FORMATIVE YEARS.

The basic institutions of American civilization and the prevailing attitudes of the present were shaped in large measure during the colonial era. This course will deal with the foundations of such institutions as the family, church and local community in America as well as the development of representative political institutions. There will also be an examination of American attitudes toward racism, religion, class distinctions, cultural ethnocentrism and imperial relations with the mother country during the same period. The aim of the course will be to analyze the reasons for two major tendencies that seemed to develop in the American colonies: the erosion of traditional European attitudes toward authority; and the emergence of a psychology of accommodation resulting from the pressures arising from the increasingly pluralistic character of the population.
Full course, Modules 3-4. Mr. Billias.

203. ERA OF THE AMERICAN REVOLUTION.

An analysis of American society in the pre-Revolutionary period with particular emphasis upon the ideological and political developments that led to the War of Independence.
Full course, Modules 1-2. Mr. Parker.

208. U.S. POLITICAL HISTORY 1828-1896.

Not offered, 1975-76.

An introduction dealing with the emergence of basic institutions, conflicts and processes which became characteristic of modern American politics. Emphasis on political parties, voting, social movements, ideology.
Full course. Mr. Formisano.

210. HISTORICAL METHOD AND CIVIL WAR.

Not offered, 1975-76.

With special reference to the American Civil War as a case study, the course introduces students to the nature of history, problems of objectivity/subjectivity, causation and research design. The first part of the course is general; while ranging broadly over problems of interpretation, it develops the thesis that history is a social science. The remainder of the course analyzes in detail events from 1820-1861. Broader comparisons with the Peloponnesian Wars, the Vietnamese Civil War and others are briefly considered.
Full course. Mr. Formisano.

216. PROSEMINAR: THE PROGRESSIVE ERA.

An analysis of the period of U.S. history from about 1900 to 1920 with emphasis on the origins, characteristics, accomplishments and significance of progressive reform.
Full course, Modules 1-2. Mr. Campbell.

218. THE U.S. IN THE 20TH CENTURY.

Not offered, 1975-76.

The American experience since about 1900 with emphasis upon the role of government in economic life and the emergence of the United States as a world power.
Full course. Mr. Campbell.

AMERICAN HISTORY - TOPICAL COURSES

220. THE AMERICAN CITY.

Not offered, 1975-76.

Major themes in the social and cultural development of American cities with focus on the process of urbanization and changing social structure. This course will be taught jointly with Urban Sociology (Soc. 247) and students can receive either History or Sociology credit.
Full course. Ms. Hareven, Mr. Ross.

221. INTRODUCTION TO AMERICAN STUDIES.

Full course, Modules 1-2. Mr. Parker, Mr. Parsons.

222. AMERICAN CONSTITUTIONAL HISTORY.

The origins and development of the American constitutional system with special reference to the role of the Supreme Court.
Full course, Modules 1-2. Mr. Campbell.

223. PROSEMINAR: AMERICAN LEGAL HISTORY.

With emphasis on the relationship of law to American society, this course will deal with selected topics in the history of American law such as the Americanization of the common law, law and economic development, the lawyer in American life and trends in legal thought.
Full course, Modules 3-4. Mr. Campbell.

224. AMERICAN ECONOMIC HISTORY.

Not offered, 1975-76.

Full course. Mr. Campbell.

226. AMERICAN THOUGHT AND CULTURE: 1740-1865.

Not offered, 1975-76.

Studies in the consciousness of selected Americans under differing conditions of time, place and circumstance. Emphasis on the reading and analysis of primary texts. Field and laboratory exposure to music, art, architecture and landscape analysis.
Full course. Mr. Koelsch.

227. ARTS AND IDEAS OF AMERICAN CULTURE-EMERSON TO THE ARMORY SHOW.

A study of the relationship of the arts to main currents of literary expression in the 19th and early 20th centuries.
Full course, Modules 1-2. Mr. Parker.

228. AMERICAN THOUGHT AND CULTURE, SINCE 1865. *Not offered, 1975-76.*

Main currents in American intellectual history since the Civil War with emphasis upon social and political thought.
Full course. Mr. Campbell.

232. AMERICAN JEWISH HISTORY: FROM COLONIAL TIMES TO THE 1970'S.

(See description under *Jewish History.*)
Mr. Rosenblum.

233. COMPARATIVE SLAVERY.

The course analyzes the institution of slavery from the perspectives of history, geography and cultural anthropology. Slave societies in the United States, the West Indies and Latin America, while serving as the primary examples or models for the course, will also be compared with African and European examples of "unfree" labor. The course seeks to define and describe the total world of the slave and demonstrate the kinds of contact which this special society had with the dominant or free society. The impact of the slave society upon the dominant class and the mutual exchange of culture between slave and master will serve as topics for discussions. Readings for the course will include recent economic interpretations of the institution of slavery, oral histories and first-person accounts of slaves in the United States and in the West Indies and socio-historical accounts of slavery throughout the world.
Full course, Modules 1-2. Mr. Turner.

234. RIGHT WING MOVEMENTS, 1790-1970. *Not offered, 1975-76.*

Wallace, McCarthyism, American fascism, Social Justice, Red Scare, A.P.A., Know nothing, Antimasons, Anti-Illumination and other movements. (By permission of instructor.)
Full course. Mr. Formisano.

235. BUSING IN BOSTON, 1974-76: AN HISTORICAL INQUIRY.

Double credit seminar, interdisciplinary, inter-institutional. Explores history of: 1) legal framework; 2) ethnic groups; 3) blacks; 4) politics since 1960; 5) desegregation in other cities; 6) residential segregation. (By permission of instructor.)
Double course, Modules 3-4. Mr. Formisano.

236. PROSEMINAR: THE FAMILY IN HISTORICAL PERSPECTIVE.

This is an intensive undergraduate and graduate research seminar funded by the Rockefeller Foundation. (By permission of instructor.)
Variable credit (one to four full courses).
Modules 1-2. Ms. Hareven.

237. HISTORY OF BRAZIL.

Beginning with a discussion of Portugal in the 15th century on the evening of the Era of Discoveries, this course examines the European, American and African antecedents and heritage of contemporary Brazil. The search for a national identity throughout its history as a colony and as a sovereign state and Brazil's attempt to define the Brazilian character will be important themes within the course. The Brazilian colonial economy, westward expansion into the Amazon basin, international rivalries for control of Brazil, the dynamics of Brazilian slavery and abolition, the political disengagement from metropolitan Portugal will be subjects for discussion and analysis. The final segment of the course will be a general discussion of Brazil in the twentieth century, the Vargas regime and the search for political stability and the coming of the 1964 military takeover by the army. Readings will include historical interpretations of Brazilian history by North American, European, African and Brazilian scholars in an attempt to present a comparative historical approach.
Full course, Modules 3-4. Mr. Turner.

EUROPEAN HISTORY - PERIOD COURSES

140. EUROPEAN HISTORY FROM THE FALL OF ROME TO THE PRESENT.

(See description under *Courses for Freshmen.*)
Mr. Lucas.

240. ANCIENT CITY-STATE. *Not offered, 1975-76.*

A comparative study of the social, political, economic and cultural institutions of the ancient Greek and Roman city-state: the duties and privileges of citizenship; empire building and urban development; political theory and practice; death of the ideal through war and revolution. Readings will include both ancient and modern authors.
Full course. Ms. Toepel.

241. ANCIENT WORLD-STATE. *Not offered, 1975-76.*

A comparative study of the social, political, economic and cultural institutions of the Greek and Roman world-states created by Alexander the Great and Augustus; the effect of the clash between the Hellenistic kingdoms and Rome; kingship in theory and practice; the management of empire and urbanism; the collapse of the world-states. Readings will include both ancient and modern authors.
Full course. Ms. Toepel.

242. THE IDEA OF HISTORY IN THE ANCIENT WORLD.

A study of the literary sources for the ancient civilizations of Egypt, the Middle East, Greece and Rome.
Full course, Modules 3-4. Ms. Toepel.

243. THE EXPANSION OF EUROPE, 1400-1600.

A survey of the origins and consequences of European expansion in its formative stages, with particular emphasis on English developments.
Full course, Modules 1-2. Mr. Barrow.

244. ENGLAND'S "OLD REGIME." *Not offered, 1975-76.*

The structure and possible causes of the peculiarities of English state and society compared with continental Europe's from the Middle Ages to about 1800.
Full course. Mr. Lucas.

245. INDIVIDUALISM, GROUP CONSCIOUSNESS AND ORGANIZATION, AND THE STATE IN "OLD EUROPE", 1550-1789. *Not offered, 1975-76.*

An examination of pre-French Revolutionary Europe as a corporative and customary political culture; a study of how that culture was altered by absolutism, militarism, mercantilism, early capitalism, modern science and the requirements of the international system of European states; and appreciation of the social and ideological legacies of the ancient regime.
Full course. Mr. Lucas.

246. THE FRENCH REVOLUTION OF 1789 AND THE COMPARATIVE STUDY OF REVOLUTIONS.

Not offered, 1975-76.

An analysis of old and new ideas of revolution, including ritual, resistance, reactionary restoration vs. innovation; of the "democratic" revolution; of the psychology, sociology and social psychology of revolutionary behavior; and of the relevance of the French Revolution to 20th century issues.
Full course. Mr. Lucas.

247. 18TH CENTURY EUROPEAN INTELLECTUAL HISTORY. *Not offered, 1975-76.*

The "Enlightenment" and its critics: the scientific revolution, philosophical reformism, and early conservative romanticism. The emphasis is upon rival perceptions of man's psychological and social nature, history and aesthetic and religious sensibilities as seen through great secondary treatments of the Enlightenment (which also introduces the student to various ways of doing intellectual history) and original sources: Hume, Beccaria, Rousseau, Condorcet, Kant, Burke, Savigny.
Full course. Mr. Lucas.

248. 19TH CENTURY EUROPEAN INTELLECTUAL HISTORY. *Not offered, 1975-76.*

The elaboration of the "Enlightenment" by its heirs and critics. The emphasis is the same as in 247, but the focus shifts to an analysis of political and economic liberalism, Social Darwinism, racism and "utopian" socialism in England and France followed by an analysis of nationalisms, Marxism, positivism, old and new conservatisms and the reassessment of the values and progress of European civilization among principally Italian and German thinkers.
Full course. Mr. Lucas.

249. INTELLECTUAL HISTORY OF EUROPE IN THE TWENTIETH CENTURY.

An investigation of major thinkers and intellectual trends, 1890-1970. An examination of the retreat from the rationalist tradition and systematic philosophy, and an analysis of new perceptions of human nature, organization, experience, knowledge and history. Extensive reading in primary sources, including Freud, Weber, Sartre, Buber, Levi-Straus, Wittgenstein.
Full course, Modules 1-2. Ms. Tolpin.

250. RUSSIA TO 1825. *Not offered, 1975-76.*

A survey of the rise of the Russian Empire, with particular emphasis on the 17th and 18th centuries.
Full course. Mr. Von Laue.

251. IMPERIAL RUSSIA, 1825-1917.

An outline of Russian development from the early nineteenth century to the collapse of the tsarist regime. The emphasis lies on political history with occasional exploration of literary and economic history as well.
Full course, Modules 1-2. Mr. Von Laue.

252. NINETEENTH CENTURY EUROPE.

Not offered, 1975-76.

Lecture and discussion course centering around the problems and dilemmas of various European political societies as they responded to the tug of modernity during the century of European preeminence throughout the world.
Full course. Mr. Borg.

253. TWENTIETH CENTURY EUROPE.

Lecture and discussion course concentrating on the characteristic problems of Europe in a half century of war, economic convulsion and political instability.
Full course, Modules 3-4. Mr. Borg.

254. PRO-SEMINAR: WORLD WAR I AND EUROPE.

Full course, Modules 1-2. Mr. Borg.

255. MODERN GERMANY.

An examination of the convulsive course of German history over the past century.
Full course, Modules 1-2. Mr. Borg.

256. REVOLUTIONARY RUSSIA, 1900-1953.

Not offered, 1975-76.

The course offers a survey of Soviet political history from the beginning of Bolshevism to the death of Stalin; it is the continuation of the course on Imperial Russia, 1825-1917.
Full course. Mr. Von Laue.

257. SOVIET RUSSIA SINCE THE DEATH OF STALIN. *Not offered, 1975-76.*

Full course. Mr. Von Laue.

EUROPEAN HISTORY - TOPICAL COURSES

246. THE FRENCH REVOLUTION AND THE COMPARATIVE STUDY OF REVOLUTIONS.

Not offered, 1975-76.

See description under *European History-Period Courses.*)
Mr. Lucas.

NTELLECTUAL HISTORY.

247. 18TH CENTURY EUROPEAN NTELLECTUAL HISTORY. *Not offered, 1975-76.*

See description under *European History-Period Courses.*)

248. 19TH CENTURY EUROPEAN NTELLECTUAL HISTORY. *Not offered, 1975-76.*

See description under *European History-Period Courses.*)
Mr. Lucas.

249. INTELLECTUAL HISTORY OF EUROPE IN THE TWENTIETH CENTURY.

See description under *European History-Period Courses.*)

258. PROSEMINAR: EUROPEAN INTELLECTUAL HISTORY. *Not offered, 1975-76.*

A research seminar on authors not read in History 247 or 248; prerequisite: successful completion of History 247 or 248 or its equivalent elsewhere and permission of the instructor.
Full course. Mr. Lucas.

259. PROSEMINAR: TOTALITARIANISM.

A study of the nature of totalitarianism and of the origins, ideology and operation of the German Nazi and Russian Soviet regimes.
Full course, Modules 3-4. Mr. Borg.

260. THE NAZIS AND THE JEWS: THE HOLOCAUST UNIVERSE.

(See description under *Jewish History.*)
Mr. Rosenblum.

296. HISTORY OF WOMEN IN EUROPE, 1500-1975.

A survey of the history of women in Europe from the late middle ages to the present, with particular emphasis on social history of the past three decades. The course will question some of the basic categories of traditional historical analysis.
Full course, Modules 1-2. Ms. Tolpin.

NON-WESTERN HISTORY COURSES
A. FAR -EAST

114. CHINA TO 1644.

(See description under *Courses for Freshmen.*)
Mr. Ocko.

115. CHINA, 1644 TO THE PRESENT.

(See description under *Courses for Freshmen.*)
Mr. Ocko.

272. PROSEMINAR: CH'ING SOCIETY.

Not offered, 1975-76.

An interdisciplinary topical survey of the Ch'ing dynasty at its height: the emperor as man and instituion; literature and the arts; the individual and the state; the seeds of destruction. (Survey course a suggested prerequisite.)
Full course. Mr. Ocko.

273.1. CHINA IN REVOLUTION: INTERPRETIVE LECTURES. *Not offered, 1975-76.*

An analysis of the major themes and historical controversies of twentieth century Chinese history. Previous work in Chinese history is required. By permission of instructor.
Half course. Mr. Ocko.

273.2. CHINA IN REVOLUTION: CULTURAL REVOLUTION IN 20TH CENTURY CHINA.

Not offered, 1975-76.

Proseminar. From among the broader topics of family, literature and education, student will select topics for papers. Weekly meetings will focus on key articles applicable to the entire group and problems of research and interpretation. History 273a is a prerequisite. By permission of instructor.
Half course. Mr. Ocko.

274. MODERN JAPAN, 1600-1940. *Not offered, 1975-76.*

A survey focusing on the growth of Japan behind the closed door, the political revolution of Meiji, Japan's pan-Asianism and increasing role as impetus for revolution in China and power in East Asia. Comparisons will be made with contemporary China. There will be voluntary discussion groups.
Full course. Mr. Ocko.

275. ASIAN RADICALS.

A comparative study of radical leaders such as Mao, Ho Chi-minh, Gandhi, Sukarno and Japanese militarists. The course will focus on motivation, intellectual and ideological underpinnings, and techniques — especially of motivation; and an effort will be made throughout to apply western world social sciences to assess the efficacy of cross-cultural comparison. Some Asian history strongly suggested. By permission of instructor.
Full course, Module 4. Mr. Ocko.

278. SPECIAL TOPICS: AMERICAN-EAST ASIAN RELATIONS.

A lecture and discussion course focusing on relations between the United States, China and Japan, and with reference to S.E. Asia as a bone of contention among the three in the twentieth century. Beginning with the 19th century the course will deal thematically with such issues

as xenophobia, imperialism and competing world views. Background in either Asian or American history is suggested but not required. Students from Govt. 264 are especially welcome. The course is open to freshmen with permission of the instructor.
Full course, Modules 3-4. Mr. Ocko.

B. AFRICA

180. TRADITIONAL AFRICA. *Not offered, 1975-76.*

(See description under *Courses for Freshmen.*)
Full course. Mr. Ford.

181. MODERN AFRICA. *Not offered, 1975-76.*

(See description under *Courses for Freshmen.*)
Full course. Mr. Ford.

280. BLACK AND WHITE IN GHANA.

The interaction of African and European cultures on the Gold Coast and in modern Ghana.
Full course, Modules 3-4. Mr. Von Laue.

281. PROSEMINAR: GHANA, THE NKRUMAH YEARS. *Not offered, 1975-76.*

Full course. Mr. Von Laue.

285. FORMAL AND NON-FORMAL EDUCATION AS AN AGENT OF SOCIAL CHANGE.

An investigation into the influence of education on class structure, occupation and identity in Africa. Both European-oriented and non-formal curricula will be considered as a means of changing attitudes and aspirations among citizens in developing countries.
Half course, Module 2. Mr. Ford.

C. RUSSIA

(See courses listed under *European History.*)

TOPICAL COURSES IN NON-WESTERN HISTORY

285. FORMAL AND NON-FORMAL EDUCATION AS AN AGENT OF SOCIAL CHANGE.

(See description under *Africa.*)

288. DEVELOPMENT PROBLEMS.

The several dimensions of development and the reasons why the gap between developed and underdeveloped countries is widening will be explored. Among the disciplines drawn upon will be: geography, government, economics and education. Problems analyzed will include — urban growth, land reform, unemployment and government planning. Tanzania, China, Brazil and other countries will be used as cases. (Listed also as Geography 125.)
Full course, Modules 1-2. Mr. Ford, Mr. Berry, Ms. Enloe.

287. COMPARATIVE REVOLUTION: RUSSIA AND CHINA.

Jointly taught seminar with limited enrollment: will explore the twentieth century revolutions in these two countries through a thematic approach. Prerequisite: Russian or Chinese history and permission of instructors.
Full course, Modules 3-4. Mr. Ocko, Mr. Von Laue.

289. PROSEMINAR: COMPARATIVE WESTERNIZATION. *Not offered, 1975-76.*

The seminar discussions will explore the diverse effects o western influence on Russia, China and West Africa (Ghana), while at the same time evolving a pattern for meaningful comparison of modernization in these three polities.
Full course. Mr. Von Laue.

JEWISH HISTORY

232. AMERICAN JEWISH HISTORY: FROM COLONIAL TIMES TO THE 1970'S.

This course examines the broad sweep of the Jewish experience on the American scene, beginning in the colonial America of 1654, and continuing, in this bicentennial year, to portray the evolution of Jewish life and thought in the expanding American society of the 19th century, and in the light of the explosive developments of the twentieth century. Topics for analysis will include ethnic traditions, religious commitments, economic adjustments, cultural horizons, social tensions and political orientations.
Full course, Modules 3-4. Mr. Rosenblum.

260. THE NAZIS AND THE JEWS: THE HOLOCAUST UNIVERSE.

This course will investigate the origins, development, operational features and fateful consequences of this most traumatic event in all human history. It will draw upon the abundance of historical, biographical, literary and philosophical sources that have become increasingly available in recent years.
Full course, Modules 1-2. Mr. Rosenblum.

262. ANTI-SEMITISM IN ITS HISTORICAL PERSPECTIVE.

This course will consider the unique features of anti-Semitism, that have set it qualitatively apart throughout the ages from other forms of virulent prejudices group tensions. Its manifestations from pre-Biblical days through Greek, Roman, medieval and modern times will be examined to determine the scope of its social, religious, economic, psychological and political roots. The contemporary period will be investigated, with the dual purpose of updating its historical evolution, and also to consider the developments that are likely to eventuate in view of the unfolding world scene.
Full course, Module 5. Mr. Rosenblum.

GENERAL HISTORY COURSES

295. THE FUTURE, WAYS OF KNOWING AND SURVIVAL.

A lecture and discussion course, instructors (an historian and a geographer) alternate as lecturers; they will comment on each other's presentations and ideas, leading into class discussion. Students will write a variety of short papers and exercises, and keep a journal of their changing reactions to the course and the subject. Instructors and students will review the possibilities and limitations of "future study," practice trend projections, systems simulation, scenario preparation, visioning, and hopefully prepare a more positive and rational attitude toward the future. An upper division course; no prerequisites.
Full course, Modules 1-2. Mr. Von Laue, Mr. Kates.

297. SPECIAL PROJECTS.

Undergraduates, normally juniors and seniors, may construct an independent research course with an instructor of their choosing. The consent of the instructor must be obtained in advance.
Variable credit.
Modules 1-2-3-4-5. Staff.

298. DIRECTED READINGS.

Undergraduates, normally juniors and seniors, may design a directed readings course to consist of a sequence of structured readings on a given topic to be approved and directly supervised by an instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

299. JUNIOR HONORS SEMINAR.

This course attempts to teach students how to write analytical and synthetic research papers and to write them well as well as to introduce students to the problems of studying history by learning about the aspirations, advantages and disadvantages of "historicism."
Full course, Modules 3-4. Mr. Borg.

GRADUATE COURSES

300. DEPARTMENTAL SEMINAR. *Not offered, 1975-76.*

A survey of some major schools of historical study and of their methods, in search of a suitable historical approach to the contemporary scene.
Full course. Staff.

AMERICAN HISTORY

301. COLLOQUIUM, THE LITERATURE OF AMERICAN HISTORY TO 1815.

This seminar takes a historiographical approach to the literature in American history from the beginning of the colonial period until the end of America's second War of Independence.
Full course, Modules 3-4. Staff.

302. COLLOQUIUM, THE LITERATURE OF AMERICAN HISTORY SINCE 1815.

Major topics and themes, emphasis on historiographical essays.
Full course, Modules 1-2. Mr. Formisano.

310. STUDIES IN 18TH CENTURY AMERICAN HISTORY.

Independent studies.
Variable credit.
Modules 3-4-5. Mr. Billias.

311. TRANSFORMATION OF AMERICAN POLITICAL CULTURE 1750-1850. *Not offered, 1975-76.*

An interdisciplinary course focusing on the social, political, ideological and institutional changes leading the formation of modern political parties. Theory, concepts and methods stressed.
Full course. Mr. Billias, Mr. Formisano.

312. RISE OF POLITICAL PARTIES IN THE EARLY AMERICAN REPUBLIC. *Not offered, 1975-76.*

This seminar deals with the origins of American political parties, the debate regarding the early party system, and a study of the process of nation building.
Full course. Mr. Billias.

315. SEMINAR: AMERICAN POLITICAL HISTORY.

U.S. Political History: Methods and Topics. Concentration on topics selected by professor and students with special attention to interdisciplinary methods and the most recent works in political history.
Full course, Modules 3-4. Mr. Formisano.

320. SEMINAR: U.S. SOCIAL HISTORY.

The impact of urbanization and industrialization on the family.
Full course, Modules 1-2. Ms. Hareven.

321. STUDIES IN RECENT AMERICAN HISTORY. *Not offered, 1975-76.*

Independent studies.
Variable credit. Ms. Hareven.

322. SEMINAR: AMERICAN URBAN HISTORY. *Not offered, 1975-76.*

The focus falls on the American adjustment to the urban industrial experience. Research will utilize original sources in Worcester and other New England towns.
Full course. Ms. Hareven.

325. STUDIES IN RECENT AMERICAN HISTORY.

Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Campbell.

326. STUDIES IN AMERICAN CONSTITUTIONAL HISTORY.

Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Campbell.

330. STUDIES IN AMERICAN THOUGHT AND CULTURE.

Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Koelsch.

335. STUDIES IN AMERICAN INTELLECTUAL HISTORY.

Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Beck.
(See Department of Philosophy.)

EUROPEAN AND NON-WESTERN HISTORY

345. STUDIES IN EARLY MODERN EUROPEAN HISTORY.

Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Borg, Mr. Lucas.

350. STUDIES IN MODERN EUROPEAN HISTORY.

Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Borg, Mr. Von Laue.

355. STUDIES IN RUSSIAN HISTORY.

Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Von Laue.

370. STUDIES IN CHINESE HISTORY.

Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Ocko.

380. STUDIES IN AFRICAN HISTORY.

Independent studies.
Variable credit.
Modules 1-2-3-4-5. Mr. Ford, Mr. Von Laue.

399. GRADUATE READINGS COURSE.

Variable credit.
Modules 1-2-3-4-5. Staff.

400. THESIS RESEARCH.

Variable credit.
Modules 1-2-3-4-5. Staff.

Interdepartmental and Non-Departmental

ID & ND 010. APPROACHES TO LANGUAGE.

An introductory course which covers a wide variety of language-related topics. Its main purpose is to uncover behind the complexity of linguistic phenomena the basic underlying principles of order that correspond to the shared purposes of all men. Through readings and discussions the student will be led to explore systematically the main characteristics of human language, the various uses of language, the principal systems of language, as well as the decisive role that language plays in the formation and expression of ideas. In the process of discovery, the student will come to an understanding of constructive concepts and controversial issues that exist in the relationship of language to thought, communication, society and culture.
Full course, Modules 1-2. Ms. Overvold.

ID & ND 103. MANDALA PHENOMENA: OLD AND NEW.

"But remember, I claimed that the mandala springs from man's own awareness of the operation of his own self in relation to the world around him and primarily to the Earth into which he is inducted at his birth;" Mary Danielli — *The Anthropology of the Mandala.* The word "mandala" means plan or diagram. In anthropology it indicates foundation or beginning. This course deals with the expression of the human mind in relationship to its environment. It concerns itself with the observation of basic social mechanisms relating man to his environment; the reduction of these to a core of principles; which are then offered to the student who, by their means, can model his personal response. Students will be expected to study the writing provided (partial list of authors and titles: Codman, *Brooke Farm;* Jung, *Archetypes of the Collective Unconscious* ; Ellis, *History of Madagascar* ; Thompson, *At the Edge of History* ; etc.). Visual mandalas will be constructed and explained in writing by each student.
Full course, Modules 1-2. Ms. Danielli.

ID & ND 120. THE GAY LIBERATION MOVEMENT.

Movements of minority protest and liberation in America have frequently arisen to challenge conventional scholarly, legal, religious, clinical and popular wisdom. This course will examine one such movement of recent times, the emergence of homosexuals as a minority protest group. The historical and social matrix of gay liberation, its internal development and its institutional and intellectual effects will be studied in a context of societal response to alternative life-styles in America.
Full course, Modules 1-2. Mr. Koelsch.

ID & ND 121. CONTEMPORARY JEWISH PHILOSOPHIES.

A discussion and analysis of the present state of Jewish philosophy and ten major 20th century Jewish thinkers. The course will be divided into three major topics: The Challenge of Jewish Thought, The Worlds of Jewish Existentialism and The Conception of Transcendence. Represented in the course will be the philosophies of Rosenzweig, Buber, Rubenstein, Borowitz, Fackenheim, Baeck, Heschel, Kaplan, Cohen and Agus.
Full course, Modules 3-4. Mr. Kaufmann.

ID & ND 122. FEMALE SEXUALITY AS REFLECTED IN JEWISH SOURCES.

Topics include family and marriage; love and sex; virginity and the bride; the wife and mother; women in high station and government; societal aberrations including adultery, divorce, widowhood. Subjects will be considered in their ancient and medieval settings with a view towards the influence that they exerted on contemporary attitudes.
Full course, Modules 1-2. Ms. Lieberman.

International Development and Social Change

PARTICIPATING FACULTY

Leonard Berry, Ph.D., Program Co-Director and Professor of Geography, Dean of the Graduate School, Coordinator of Research
Richard Ford, Ph.D., Program Co-Director and Associate Professor of Comparative History
Saul B. Cohen, Ph.D., Professor of Geography, Director of the Graduate School of Geography, Adjunct Professor of Government and International Relations
Charles Hays, M.D., Assistant Professor of International Development (Affiliate)
Robert W. Kates, Ph.D., University Professor (Geography)
Theodore H. Von Laue, Ph.D., Jacob and Frances Hiatt Professor of History
Cynthia Enloe, Ph.D., Associate Professor of Government and International Relations
Robert C. Hsu, Ph.D., Associate Professor of Economics
Stephen L. Feldman, Ph.D., Assistant Professor of Geography
Alan F. Gummerson, Ph.D., Assistant Professor of Economics
Richard A. Howard, Ph.D., Assistant Professor of Geography and Adjunct in Biology
Douglas L. Johnson, Ph.D., Assistant Professor of Geography
Sharon P. Krefetz, M.A., Assistant Professor of Government and International Relations, Director of Interdisciplinary Studies
Onkar S. Marwah, M.A., Assistant Professor of Government and International Relations
Ann T. Schulz, Ph.D., Visiting Associate Professor of Government and International Relations

PROGRAM

The Program in International Development and Social Change is one of the BA/MA offerings. It combines both research and training activities.

The research program offers faculty, graduate students, and undergraduates opportunities to work individually and cooperatively in topics of concern related to international development and social change. Current research projects include environmental constraints to the world's least developed nations, retrieving the collective memory of the Sahelian drought, long-range planning processes for east and central Africa and the relationship between technological intervention and social change in the developing world. Associated with these collaborative research efforts are seminars, symposia, field internships and summer activities.

The teaching program is designed to introduce students to some of these research activities as well as to prepare them for careers and participation in international fields. It will attempt to orient majors to the changing world in which we live and to the increasing role which developing societies play in the interdependencies of the world's social, economic and political systems. The program also hopes to attract a wide range of non-majors in one or more of the courses, seminars or action research activities. It is also possible to work out a double major with one of the cooperating departments.

A new program in development, launched at a time of disillusionment and widespread doubt about progress in international development, requires special explanation. It does not seek to train agricultural specialists, highway design engineers, or sanitation system contractors. Nor do we expect the majority of our graduates to work for the established international agencies such as USAID, CARE or the United Nations. Rather, we assume that graduates will acquire basic skills of economic and social analysis as well as an orientation toward development and social change. These skills and attitudes will be well suited for any number of careers in either the private or public sector which deal with developing areas of the world. The program also provides solid preparation for those who seek further training in graduate or professional schools.

To attain these skills, it seems best to work within a combined graduate-undergraduate setting which blends the breadth of the liberal arts with the specialization of professional training. Thus, the curriculum combines existing courses, new cross-disciplinary courses, an internship, a basic research project and an applied research activity.

Expectations: The Program has established five expections for its majors:

. . .master basic skills including competence in a foreign language, statistical and computer skills and techniques of economic and social analysis

. . .attain an understanding of the development process in its political, economic, historical and environmental aspects

. . .develop an investigation/research approach to an actual problem and to test the growing body of theoretical knowledge in an internship experience

. . .wrestle with the problem of hammering out a philosophy of development

. . .pursue a career track, selected from one of three existing options — development management, development planning, development education or a modified form of one of these tracks

COURSE SELECTION

Most course selections will be a matter of individual discussion with faculty in International Development. Because program enrollment will be small, close conversations with faculty are encouraged.

Four different categories of courses will be available:

1) *Prerequisites:* All students should make certain that prerequisites are completed. One prerequisite requires that students complete Principles of Economics (Economics 10 and Economics 11). If students have not done so already, they should take these courses as soon as possible. The second prerequisite is foreign language competence. Students should discuss with a faculty member the specific interests which they have for the program and on that basis, determine which language proficiency would be most helpful for them. Language proficiency can be demonstrated either through proven competence or course work equivalent.

2) *Core Courses:* The second category of courses offered in international development will be core courses.

Geography 125. DEVELOPMENT PROBLEMS.

(Same as Government 125, History 288.) Refer to course description under Geography, History or Government.
Ms. Enloe, Mr. Berry, Mr. Ford.

Economics 228. ECONOMICS AND DEVELOPMENT.

Refer to course description under Economics.
Mr. Hsu.

Geography 110. INTRODUCTION TO STATISTICAL GEOGRAPHY.

Refer to course description under Geography.
Mr. Feldman.

Geography 212. COMPUTER PROGRAMMING.

Refer to course description under Geography.
Mr. Howard.

3) *Track Courses:* Two tracks (Development Planning and Development Education) for specialized career training ar now available. A third track in Development Management is in preparation.

For the Development Planning track, students will take three basic courses (one in Resource Planning, another in Economic Planning and a third in Political/Administrative Planning) plus three courses subsumed under one of these three headings.

For the Development Education track, students will take three basic courses (Formal and Non-Formal Education as an Agent of Social Change, Development Education, and Educational Psychology) plus three courses in a teaching certification track in the social sciences. At a later date, the program hopes to develop a parallel track for educational researchers but it will not be available next year.

For details of the rationale and full requirements for the track sequences, consult the faculty or obtain a copy of the International Development *"Program Design."*

Additional courses which may be applied to the tracks, based on individual discussions with faculty, include:

International Development 003. RURAL HEALTH CARE AND NUTRITION IN DEVELOPING COUNTRIES.

Module 5. Mr. Hays.

Government 103. POLITICS IN THE DEVELOPING AREAS.

Refer to course description under Government.
Modules 1-2. Mr. Marwah.

Government 291. POLITICAL ECONOMIES OF CHINA AND INDIA, 1950-1970.

Refer to course description under Government.
Modules 3-4. Mr. Marwah.

Government 167. REVOLUTION AND POLITICAL VIOLENCE.

Refer to course description under Government.
Module 3. Ms. Schulz.

Government 233. INEQUALITY AND POLITICAL DEVELOPMENT.

Refer to course description under Government.
Module 4. Ms. Schulz.

Geography 183. CARIBBEAN GEOGRAPHICAL PROBLEMS.

Refer to course description under Geography.
Mr. Lewis, Mr. Feldman.

Geography 150. AQUARIUS.

Refer to course description under Geography.
Staff.

Geography 263; History 263. THE FUTURE WAYS OF KNOWING AND SURVIVAL.

Refer to course description under Geography.
Mr. Kates, Mr. Von Laue.

History 285. FORMAL AND NON-FORMAL EDUCATION AS AN AGENT OF SOCIAL CHANGE.

Refer to course description under History.
Module 2. Mr. Ford.

4) *Related Courses:* Majors in the Program for International Development will take a series of area study courses and related courses. The details for these requirements are spelled out in the "Program Design" which is available from the International Development Office. The following diagram is taken from that Program Design and should help explain the relationship of individual courses to the program as a whole.

MODEL SCHEDULE B.A./M.A. PROGRAM IN INTERNATIONAL DEVELOPMENT

SOPHOMORE

1. core-skill Social Science Methods
2. core-orientation Issues of Development
3. prerequisite or elective or area study
4. prerequisite or elective or area study
5. core-skill Statistics
6. core-orientation Biography Seminar
7. track
8. prerequisite or elective or area study

JUNIOR

1. core-skill Economic Development
2. track
3. elective or area study
4. elective or area study
5. core-skill Programming
6. track
7. track
8. elective or area study

SENIOR/GRADUATE

1. track
2. track
3. elective or area study
4. elective or area study (Grad.)
5. core-seminar Workshop (Grad.)
6. core-seminar Workshop (Grad.)
7. elective or area study
8. elective areas of study (Grad.)

INTERNSHIP

GRADUATE

1. core - research thesis
2. core - The Literature of Development
3. core - Applied Development Problems
4. core- Post-Internship Seminar
5. core - research thesis
6. core - The Literature of Development
7. core - Applied Development Problems
8. core - A Philosophy of Development

Jewish Studies

AFFILIATE FACULTY IN JEWISH STUDIES

Walter Schatzberg, Ph.D., Coordinator for Jewish Studies, Professor of German, Chairman, Department of Foreign Languages and Literatures
William E. Kaufmann, Ph.D., Lecturer in Jewish Studies
Joseph Klein, D.D., Lecturer in Biblical Literature
Harold S. Kushner, Ph.D., Lecturer in Jewish Studies
Sarah Roth Lieberman, Ph.D., Lecturer in Jewish Studies
Miriam Raviv, B.A., Lecturer in Hebrew
Herbert Rosenblum, Ph.D., Lecturer in Jewish Studies

The following courses relating to Jewish Studies are offered in the 1975-76 academic year in various departments or as an interdepartmental discipline. For course descriptions please check the course listings within the departments. For further information concerning the Jewish Studies Program and to discuss the possibility of integrating Jewish Studies courses within various departmental majors, contact Mr. Schatzberg.

HEBREW LANGUAGE COURSES

(See Department of Foreign Languages and Literatures.)

Hebrew 11. ELEMENTARY HEBREW.

Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Raviv.

Hebrew 12. INTERMEDIATE HEBREW.

Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Raviv.

Hebrew 130. ADVANCED HEBREW.

Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Raviv.

HEBREW LITERATURE COURSES TAUGHT IN ENGLISH

(See Department of Foreign Languages and Literatures.)

Hebrew 120. HEBREW SCRIPTURES - PROPHETIC AND WISDOM LITERATURE.

Full course, Modules 1-2. Mr. Klein.

Hebrew 125. RELIGION IN A TIME OF CRISIS: THE LITERATURE OF FIRST CENTURY ISRAEL.

Full course, Modules 3-4. Mr. Kushner.

Hebrew 165. MODERN HEBREW LITERATURE: THE SHORT STORIES OF AGNON.

Half course, Modules 1. Mr. Kushner.

GEOGRAPHY

Geography 288. GEOGRAPHIC AND ENVIRONMENTAL PROBLEMS IN ISRAEL.

Full course, Module 5. Mr. Cohen.

HISTORY

History 232. AMERICAN JEWISH HISTORY: FROM COLONIAL TIMES TO THE 1970'S.

Full course, Modules 3-4. Mr. Rosenblum.

History 260. THE NAZIS AND THE JEWS: THE HOLOCAUST UNIVERSE.

Full course, Modules 1-2. Mr. Rosenblum.

History 262. ANTISEMITISM IN ITS HISTORICAL PERSPECTIVE.

Full course, Module 5. Mr. Rosenblum.

INTERDEPARTMENTAL AND NONDEPARTMENTAL

ID and ND 121. CONTEMPORARY JEWISH PHILOSOPHIES.

Full course, Modules 3-4. Mr. Kaufman.

ID and ND 122. FEMALE SEXUALITY AS REFLECTED IN JEWISH SOURCES.

Full course, Modules 1-2. Ms. Lieberman.

Linguistics

114. GENERAL PHONETICS AND PHONEMICS.

Phonetics is the scientific study of all the physical aspects of speech. Phonemics treats of the systematic nature of the use of the physical means to form the communication systems we call languages. This course is concerned with language in general, so as to provide the theoretical framework necessary for describing the pronunciation system of any language. It includes the fundamentals of articulatory and acoustic phonetics, and it proceeds to general structural phonemics and some of its modifications and the theoretical questions raised by them. Prerequisite: consent of the instructor.

This course, or its equivalent, is prerequisite to certain others, among which are Spanish 248 (Spanish Phonology), Romance Languages 258 (History of the Romance Languages) and Linguistics/Education 260 (Linguistics and Language Learning). The instructor is prepared to suggest alternative ways of meeting the prerequisite, however. Given in alternate years.

Half course, Module 1. Mr. Reid.

115. MAN AND LANGUAGE.

An introduction to the analysis of the nature and function of human language and its role in the life of individuals and societies. The approach is interdisciplinary, with attention to the points of view of philology, contemporary linguistics, anthropology, psychology and philosophy. The lectures focus on such questions as: What is language? What is the relation between language and thought? To what extent does our language determine how we perceive the world? Why and how do languages change? What other functions does language serve besides communication? Why do we not have a world language? How have linguists achieved an objective, scientific analysis of linguistic systems? What are the limitations of such a science?

The course is designed for the general student who wishes to know more about the nature of the uniquely and universally human institution of language, and for the student or teacher of English or foreign language who is interested in the light which linguistic science can throw upon the relations between his field and other areas of life and knowledge. Prerequisite: consent of the instructor.

Full course, Modules 1-2. Mr. Reid.

260. LINGUISTICS AND LANGUAGE LEARNING.

(Also designated Education 260)

Not offered, 1975-76.

An exploration of various fields of linguistic study from the point of view of their relevance to foreign language learning. Intended to meet the needs of two classes of students: 1) prospective foreign language teachers who already have advanced mastery of their foreign language and 2) other students with a more general interest in the nature of language, whose primary orientation may be toward related problems in, for example, psycholinguistics or sociolinguistics.

Approaching language as *behavior* and as *system*, the course directs attention to the levels ranging from the culture system to the system of the language as a whole and finally to its subsystems: lexical, grammatical and phonological.

Offered in alternate years. Prerequisite: Linguistics 114, which may be taken either prior to or concurrently with this course, and for which substitutes may be available if the instructor is consulted well in advance; consent of the instructor is required.

Mr. Reid.

285. SEMANTICS. *Not offered, 1975-76.*

This course studies meaning. It deals with and classifies the changes in the meanings of words and phrases, and it analyzes simile and metaphor. It also deals with the parametric organization of the semantic system. Some attention is paid to the relation between thought and language. Offered at the discretion of the English Department. Prerequisite: consent of the instructor.

Full course, Modules 3-4. Mr. Macris.

287. INTRODUCTION TO LINGUISTICS.
Not offered, 1975-76.

This course is devoted to the theory and methodology of descriptive linguistics. It deals with the nature and function of language, the relation between speech and writing, phonology, morphology, syntax, lexicology, the sociocultural setting of language, the contact of linguistic systems and the problems of "correctness." Emphasis is placed upon the dynamics of systems analysis. Offered at the discretion of the English Department. Prerequisite: consent of the instructor.
Full course, Modules 1-2. Mr. Macris.

288. COMPARATIVE AND HISTORICAL LINGUISTICS.
Not offered, 1975-76.

This course examines the theory and methodology of comparative and historical linguistics. It focuses on linguistic geography, linguistic borrowing, the causes of linguistic change, the comparative method and reconstruction, and problems in analyzing languages with and without a literary tradition. Emphasis is placed upon the dynamics of systems analysis. Offered at the discretion of the English Department. Prerequisite: consent of the instructor.
Full course, Modules 3-4. Mr. Macris.

Education 269. SPEECH AND COMMUNICATION DEVELOPMENT AND DISORDERS.

Refer to course description under Education.

Education 288. SOCIOLINGUISTICS.

Refer to course description under Education.
Staff.

Education 336.1. LANGUAGE AND COGNITIVE DEVELOPMENT.

Refer to course description under Education.
Staff.

Education 336.2 BILINGUAL EDUCATION.

Refer to course description under Education.
Staff.

English 280. HISTORY OF THE ENGLISH LANGUAGE.

Refer to course description under English.
Mr. Macris.

English 282. SEMINAR: OLD ENGLISH.
Not offered, 1975-76.

Refer to course description under English.
Mr. Macris.

English 284. SEMINAR: MODERN AMERICAN ENGLISH.
Not offered, 1975-76.

Refer to course description under English.
Mr. Macris.

English 286. SEMINAR: LINGUISTIC APPROACHES TO LITERATURE. *Not offered, 1975-76.*

Refer to course description under English.
Mr. Macris.

English 295. TEACHING ENGLISH AS A SECOND LANGUAGE.

Refer to course description under English.
Mr. Macris.

Philosophy 185. PHILOSOPHY OF LANGUAGE.

Refer to course description under Philosophy.
Staff.

Romance Languages 258. HISTORY OF THE ROMANCE LANGUAGES.

Refer to course description under Foreign Languages and Literatures.
Mr. Reid.

Spanish 248. SPANISH PHONOLOGY.
Not offered, 1975-76.

Refer to course description under Foreign Languages and Literatures.
Mr. Reid.

Management

DEPARTMENT FACULTY

Harold T. Moody, Ph.D., Associate Professor of Economics and Management
Leon Graubard, M.B.A., Lecturer in Management
Daniel R. Kilty, Ph.D., Lecturer in Management
Ira Schwartz, M.B.A., Lecturer in Management

The department offers a "pre-management" option for undergraduates, and a graduate program leading to the M.B.A. degree. The undergraduate option and the graduate degree program both are small and flexible, designed to allow the participation of students in a wide variety of educational experiences in profit and non-profit organizations.

THE UNDERGRADUATE OPTION

The option provides courses emphasizing the basic concepts and techniques of management which can serve to prepare a student for entrance into M.B.A. programs as well as to supplement the excellent liberal arts education at Clark. These courses do not constitute a major within the university, but can serve either as electives or as a part of other major programs. Interested students should consult with advisors from their major departments for relationship of these courses to their major.

THE GRADUATE PROGRAM

The M.B.A. program has unique features which should be evaluated by the prospective student in the light of his interests and preferences. First, only the most important topics in the study of management are included: marketing, capital investment analysis, information systems, behavioral science and organizational change. These topics are applied to a wide variety of organizations. Second, to complete the graduate program, the student must create a part of his program in conjunction with the faculty, administration and other students. The department regularly schedules courses and seminars only in the above five fields. Thus, workshops, special courses and other forms of educational projects must be continually created by the students. Experts from both academic and practicing backgrounds are brought into the program temporarily to meet the changing demands. Third, the department is not solely committed to the study of business organizations. The faculty believes the study of management applies to all organizations, non-profit as well as profit. Consequently, the theoretical core of each field of study is emphasized, and descriptive institutional material is used to particularize the core. The mix of students in the program including current and future managers of educational, health, religious, government and business organizations, forces the faculty to focus on the universal principles of managing. Fourth, all graduate courses and seminars are scheduled in the late afternoons and evenings. These hours do not mean it is an evening program for part-time students, with a separate program in the daytime for full-time students. It is one program, with both part- and full-time students attending the same courses, seminars and special projects. This aspect of the program contributes a unique atmosphere in which students learn from each other's wealth of different practical and academic experience.

A graduate program of 10 full courses (10 credits) is required, which can be completed in one academic year. Prior to graduate study, a basic knowledge in 9 subject areas must be demonstrated. These prerequisites are not waived on the basis of previous academic or other experiences because of the great variability in coursework and memory span of students. Although inconvenient for some, the required demonstration of knowledge results in a better graduate education for all. While individual study and the taking of waiver examinations is urged, the department offers the subjects as half-semester courses for those who would prefer them.

ADMISSION TO THE PROGRAM

All undergraduate majors are given equal weight in the admission decision. Persons interested in the program should request a Bulletin from the department. Those wishing to apply should complete the accompanying application form and return it to the department with the application fee. When all supporting documents have been received, the application is considered by the admissions committee, which meets monthly through the academic year. Admission is for September or February.

COURSES

Management courses offered each semester vary according to student interest.

100. INTRODUCTION TO MANAGEMENT AND ADMINISTRATION.

An investigation of persons who manage organizations, profit and non-profit, through the eyes of today's muckrackers, reformers and theorists. The class will analyze a book per week which is selected to give a perspective on why managers exist, their legal and illegal shortcomings and possible alternatives to the existing organizational structure.
Full course, Modules 1-2. Mr. Moody.

202. INTRODUCTION TO COMPUTER MODELING OF ORGANIZATIONS.

To make students aware of the possibility and usefulness of representing some aspects of human behavior in mathematical terms; to formulate specific kinds of activities and to manipulate and solve them using the computer. Necessary FORTRAN is included.
Full course, Modules 1-2. Mr. Moody.

203. INTRODUCTION TO STATISTICS.

An introduction to decision-making when the future is unknown, using Beyes' criteria. Some statistical inference is also included.
Full course, Modules 1-2. Mr. Moody.

205. INTRODUCTION TO ACCOUNTING.

Elements of generally accepted accounting procedures are presented for several major types of institutions, such as business, government, educational and health. The accounts are examined as a tool for managerial decision-making.
Full course. Staff.

206. INTRODUCTION TO INFORMATION SYSTEMS.

Provides an introduction to the systems approach and some applications of computers in different types of organizations.
Full course. Staff.

209. INTRODUCTION TO MARKETING.

An introduction to the consumer and consumer behavior, promotional techniques, pricing and the mixture of services provided by the organization.
Full course. Staff.

210. INTRODUCTION TO CAPITAL INVESTMENT AND FINANCE.

The capital investment decisions of all organizations require long-range planning decisions. Simple techniques

are reviewed, such as present value and cost-benefit analysis.
Full course. Staff.

211. INTRODUCTION TO BEHAVIORAL SCIENCE AND ORGANIZATIONAL DEVELOPMENT.

Considers the nature and development of organizational structure in response to changing technology as well as to changes in concepts for controlling the activities of those who must interact effectively to achieve organizational goals.
Full course. Staff.

310. BEHAVIORAL SCIENCE.

The study of the nature of groups and behavior of people within groups. The focus is on the individual in various organizational settings, the interaction of the individual within a group, the processes of group concept formulation, the interrelations among cultural assumptions and behavior in organizations, the effect of technology on behavior and other topics in the field.
Full course. Staff.

311. SEMINAR IN BEHAVIORAL SCIENCE.

Variable credit. Staff.

320. ORGANIZATIONAL DEVELOPMENT.

The study of the relationships between the structure of organizations and the culture, technology and economic setting of the institution. The development of and changes in organizational structure in response to changes in technology as well as in concepts of control.
Full course. Staff.

321. SEMINAR IN ORGANIZATIONAL DEVELOPMENT.

Variable credit. Staff.

330. MARKETING THEORY AND RESEARCH.

The study of the relationships between an organization and the users of its product. Topics include the identification and estimation of the number and type of potential users, the determinants of user behavior, organizational decisions concerning output mix and strategies when faced with incomplete information, pricing policies (including zero price for free services provided by some non-profit organizations), output quality and advertising strategies.
Full course. Staff.

331. SEMINAR IN MARKETING THEORY AND RESEARCH.

Variable credit. Staff.

340. CAPITAL BUDGETING AND FINANCE.

The study of the special long-range problems involved in the choice of capital investment and its financing. Most investment projects are interrelated and decisions must be made with only partial information, but traditional investment decision rules do not allow for these realities. These problems are studied as well as the development and changes in managerial talent, and the time sequence of investments. Also of interest in this field is an understanding of the budgeting process in the behavior of individuals within organizations, whether business or non-profit, and their effects on managerial investment decisions.
Full course. Staff.

341. SEMINAR IN CAPITAL BUDGETING AND FINANCE.

Variable credit. Staff.

350. INFORMATION SYSTEMS.

The study of the interaction between the creation of rules governing the gathering and processing of information about the organization and its environment, and their subsequent effect on managerial decisions. This includes the study of computerized information systems.
Full course. Staff.

351. SEMINAR IN INFORMATION SYSTEMS.

Variable credit. Staff.

380. DYNAMICS OF CONTEMPORARY PERSONNEL MANAGEMENT.

This course is intended to be a pragmatic seminar with maximum student participation, utilizing guest lecturers, selected readings and limited cases. The purpose of this course is to familiarize the student with the broad sociological, economic, psychological and management issues confronting managers in contemporary society. To some extent, the course material will vary according to student interest.
Full course. Staff.

381. SECURITIES ANALYSIS.

An analysis of the financial markets for government and corporate securities, both from the point of view of the issuer and the purchaser. Discussion will include economic and political factors affecting markets and analysis of specific securities.
Full course. Staff.

383. BUSINESS POLICY FORMULATION.

A pragmatic approach to decision making in the policy area, emphasizing the development of a logical, problem-solving model and its application to case materials. Students will be expected to work together in pairs to formulate and present written analyses of case problems. In addition to submission of the written case analyses, each student will be required to submit a term project consisting of a case write-up reflecting a real-world policy problem.
Full course. Staff.

384. MULTI-NATIONAL BUSINESS.

This survey course will cover such functional areas as organization, marketing, finance, planning and multinational environment. It will cover strategies for developed and developing countries, with specific reference to Europe and Latin America.
Full course. Mr. Kilty.

390. RELATING FUNCTIONAL MANAGEMENT TO PRODUCTION LINES.

A survey of management techniques as applied to the manufacturer of a product. Particular emphasis will be placed on interdisciplinary relationships and the ways in which the professional manufacturing manager utilizes skills from many diverse fields to accomplish his objectives. To some extent the course material will vary according to student interest.
Full course. Staff.

391. ENTREPRENEURSHIP IN MARKETING.

Discussion of the creation of a marketable package from an entrepreneurial viewpoint, with applications ranging in scope from the development of "ground-zero" situations to modifications in existing packages for consumer, service and industrial organizations seeking profitable markets in both European and domestic markets. Students will create a marketable package as part of the seminar.
Full course. Staff.

392. CRITERIA FOR PERSONNEL DECISIONS.

This course will focus on a wide range of personnel decisions, from motivation to final termination and relevant considerations in making these decisions.
Full course. Staff.

Mathematics

DEPARTMENT FACULTY

Robert W. Kilmoyer, Jr., Ph.D., Associate Professor of Mathematics, Department Chairman
John F. Kennison, Ph.D., Professor of Mathematics
Bhama Srinivasan, Ph.D., Associate Professor of Mathematics
John S. Stubbe, Ph.D., Associate Professor of Mathematics
Edward Cline, Ph.D., Assistant Professor of Mathematics
Stanley J. Poreda, Jr., Ph.D., Assistant Professor of Mathematics
David E. Tepper, Ph.D., Assistant Professor of Mathematics
Norman Sondak, Dr. of Engineering, Professor of Mathematics (Affiliate)
Mayer Humi, Ph.D., Assistant Professor of Mathematics (Affiliate)

UNDERGRADUATE PROGRAM

The department offers several courses of a general nature which may fulfill the needs of students at all levels who are interested in mathematics either as a discipline in itself or as a tool in other disciplines.

A variety of elementary mathematical needs can be met by means of the Math Clinic and Tutorial, Math 10. Students work at their own pace and choose a program suited to their needs. The Clinic is also well adapted to the scheduling of the modular calendar since it can be taken as a single- or double-strength course in any of the first four modules. Math 11 may be used as a preparation for Calculus and may be taken independently of Math 10.

The calculus courses (Math 12, 15, 16) are all normally open to freshmen. However, students with a weak background are advised to take Math 10 or Math 11 first. Diagnostic tests are available for students who are uncertain about which courses to take. Math 12 is the standard first year calculus course while Math 16 is the more theoretically-oriented Honors Calculus. Math 15 relates calculus to probability theory and provides technical tools applicable to the life and social sciences. The calculus courses are sectioned and tend to be relatively small. Students may start Math 12 in either the fall or the spring. A calculus course is strongly advised for students in the sciences and all students seriously interested in mathematics.

Students who need a basic course in computer programming might take Math 118, which could be followed by Math 119 or 120 for applications. Linear algebra is increasingly a tool in many of the social sciences and Math 113 is an introduction to this subject. Math 160 is designed to help students acquire an understanding of concepts through problem solving. Students who wish to experience some of the beauty of mathematical reasoning at an elementary level can take Math 124, 125, 115 or 140.

THE MAJOR IN MATHEMATICS

The prospective major is urged to vist the department and to fully discuss the different approaches to the major which the department has made available. There are programs in pure mathematics, actuarial science, mathematics/computer science, mathematics/education and mathematics/management. The objectives and requirements for these programs can be obtained from the department. The prospective major should also note the mathematics specialization in the Science, Technology and Society program. In addition to courses at Clark, some of these programs can be enriched by choosing appropriate courses within the Worcester Consortium.

The current requirements for the major are:

1) Ten full courses in mathematics at or beyond the level of Math 12. (Up to four full courses in computer science beyond C.S. 101 may be substituted. Other substitutions for the various approaches to the major are also permitted with department approval.) At least two full courses on the 200-level (or the equivalent — see below)

must be included. Math 13 and 113 should normally be taken in the sophomore year.

2) Three full courses from one of the following areas: biology, chemistry, computer science, economics, geography, geology, philosophy, physics, psychology, sociology.

3) At least 9 courses from other than Group A courses and certain courses in computer science, economics, geography and psychology which depend heavily on mathematics. In each case, please consult with the department.

The purpose of the 200-level requirement is to insure that a major's program has depth or emphasis. For students interested in math education, this requirement can be met by taking the education module and the math education course (Math 150). For students taking other similar courses through the Consortium, please consult with the department to see if the 200-level requirement is met.

GRADUATE PROGRAM

The department offers courses leading to the degrees of Master of Arts and Doctor of Philosophy.

The requirements for the M.A.* are: 1) 10 full courses at least 8 of which must be on the 300 level. These courses usually include one or two full courses of Math 330 — the writing of the master's thesis. They may include seminars and reading courses; 2) the basic courses, Math 316, 318 and 325 must be included. Each of these requirements may be waived for a student presenting evidence satisfying the department of his or her knowledge of the material in question; 3) a master's thesis and 4) an oral examination.

A student working toward the Ph.D. degree and electing to omit the M.A. thesis and M.A. oral examination will be recommended for the M.A. degree upon successful completion of the Ph.D. Preliminary Examination.

The requirements for the Ph.D.* follow the general requirements of the graduate school. The Ph.D. Preliminary Examination is usually given orally, but may be written under certain circumstances. Students should consult with their advisors by November of their second year. Students entering with a master's degree should discuss this immediately. Failure to take this examination at the appropriate time may result in the department not recommending a student for continued support. Scholarships, graduate instructorships, new courses are subject to final approval by the Graduate Board.

The language requirement will be considered to have been fulfilled if the candidate can demonstrate sufficient linguistic ability to carry on effective research in his or her field. The department's decision will depend heavily upon the recommendation of the candidate's advisor.

*All candidates for the M.A. and Ph.D. degrees in mathematics will be required to serve as teaching assistants or as assistants in the computing center as part of the work for their degrees.

COURSES

10. MATH CLINIC AND TUTORIAL.

Individual conferences, diagnostic tests, programmed exercises and projects are used to develop mathematical skills, concepts and confidence. This course does not involve classes, but relies on a one-to-one approach. Math 10 may be taken more than one module as long as the total number of full course credits for 10 and 11 do not exceed two.
Modules. Mr. Kennison, Mr. Stubbe.

11. INTRODUCTION TO MATHEMATICS.

This course is designed to introduce topics in finite mathematics and can also serve as an exposure or review of those topics which are necessary for calculus. Typical areas to be covered include algebra, theory of equations, geometry, trigonometry and probability.
Full course, Modules 1-2.
Full course, Modules 3-4.
Full course, Module 5. Staff.

12. CALCULUS.

Introduction to differential and integral calculus of one variable; sequences and series; essential for further study in mathematics as well as for the study of applications in the natural sciences. Not open to students who have taken Math 15 or 16. One year long. May be started Modules 1-2 or Modules 3-4.
Full course, Modules 1-2.
Full course, Modules 3-4.
Full course, Module 5. Mr. Tepper, staff.

13. INTERMEDIATE CALCULUS.

This course assumes the knowledge of one variable calculus and deals with functions of several variables. Topics covered include partial derivatives, line and surface integration and sequences and series. Applications of these topics to complex analysis, vector analysis and Fourier analysis are considered. Prerequisite: Math 12, 16 or equivalent.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Poreda.

15. PROBABILITY AND CALCULUS FOR THE SOCIAL AND LIFE SCIENCES.

A course designed to acquaint the student with the foundations of calculus and probability. Emphasis will be on applications which will be drawn from the fields of biology, economics, etc. The differential and integral calculus will be discussed and applications will include descriptive statistics.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Stubbe, staff.

16. HONORS CALCULUS.

This course is designed for math majors and others who are inclined towards a theory-oriented approach to calculus. Like Math 12, it is also an introduction to

differential and integral calculus of one variable, but there is more emphasis on understanding the concepts involved.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Kilmoyer.

88. DIRECTED READINGS IN MATHEMATICS.

Variable credit. Staff.

89. SPECIAL PROJECTS IN MATHEMATICS.

Variable credit. Staff.

100. MATHEMATICAL MODELS. *Not offered, 1975-76.*

This course introduces the student to the concept of a mathematical model and its application to the solution of real problems. Examples will include application in the areas of finance, transportation, production scheduling, economics and population theory. The course will include analysis of models constructed by students.

113.1. MATRIX ALGEBRA.

The topics included in the two module sequence 113.1, 113.2 are basic to most applications of mathematics. The first section covers solutions of systems of linear equations by Gaussian elimination, matrices, determinates, inversion and vector spaces.
Half course, Module 1. Staff.

113.2. LINEAR ALGEBRA.

Topics covered include bases, dimension, linear transformations, eigenvalues and canonical forms.
Prerequisite: 113.1 or consent of instructor.
Half course, Module 2. Staff.

115. INTRODUCTION TO ALGEBRAIC SYSTEMS.

Not offered, 1975-76.

This course is designed to provide a gradual introduction to abstract mathematical thought and to familiarize the student with the language in which more advanced mathematical and scientific theories are stated. Groups, rings, integral domains and fields are discussed. This theoretical material is applied to derive elementary results from number theory and to discuss the problems of finding roots to polynomials and the trisection of the angle.

118. FORTRAN FOR SCIENCE STUDENTS.

This is a one module introductory FORTRAN programming course designed especially for the student intending to pursue a major in the mathematically-oriented sciences or for those who possess a fair amount of mathematical sophistication. Although there are no prerequisites, a student should have taken about three years of math in high school and should be able to handle elementary algebraic expressions and problems. This course will introduce the basic elements of FORTRAN language and an overview of computer programming and data processing in general. This course is essentially an accelerated version of CS 101a.
Half course, Module 1. Mr. Stubbe.

119. ELEMENTARY NUMERICAL ANALYSIS.

This is a one module introductory course in numerical analysis and the application of computers to the solution of certain numerical problems. Topics covered will include interpolation, error analysis and interactive methods.
Prerequisite: Math 12 and either Math 118 or CS 101 or permission.
Half course, Module 2. Mr. Stubbe.

120. LINEAR PROGRAMMING. *Not offered, 1975-76.*

This is a one module course in linear programming, its applications and numerical algorithms. The course will include Dantzig (Simplex) algorithm and integer programming. This course will require a modest amount of FORTRAN programming and is intended to follow Math 118, CS 101a or the equivalent. Prerequisite: Math 118 or permission.

124. INTRODUCTION TO GEOMETRY.

This course starts with revisiting Euclidean geometry, then leads, via Desargues' and other Theorems, to projective geometry. Some transformations of the plane are considered. Finally, some finite geometries are studied. One of the aims of this course is to show the beauty of the deductive approach in mathematics.
Prerequisite: equivalent of Math 11.
Full course, Modules 1-2. Ms. Srinivasan.

125. THEORY OF NUMBERS.

This is an introduction to number theory, and also aims to train students to understand mathematical reasoning and learn to write proofs. The topics covered include the unique factorization of integers as products of primes, the Euclidean algorithm, congruences, Fermat's Theorem and Euler's Theorem and some applications of the latter, e.g. magic squares. Prerequisite: equivalent of Math 11.
Full course, Modules 3-4. Ms. Srinivasan.

140. INTRODUCTION TO MATHEMATICAL LOGIC.

The propositional calculus and the first order predicate calculus, which consists of a language and a method of proving statements made in that language will be constructed and discussed predominately in relation to mathematical questions such as consistency and completeness.
Full course, Modules 1-2. Ms. Srinivasan.

145. ELEMENTARY DIFFERENTIAL EQUATIONS.

Not offered, 1975-76.

An introduction to elementary techniques and concepts for solving and applying differential equations. The equations discussed appear in biology, economics, the physical sciences and other fields. They give mathematical models describing exponential growth, exponential growth with bound, vibrating springs, planetary motion and other similar situations.
Prerequisite: Math 13a or permission of the instructor.

150. SEMINAR IN MATHEMATICAL METHODS AND MATERIALS.

Methods and materials are taught: 1) to acquaint the student with various methods of approach for theories on teaching math on the secondary school level, and 2) to give the student a pre-student-teaching experience. While conducting mini-courses in math with South High School and the Alternative School, the seminar discusses articles that are concerned with teaching math, the relationship of the theories to the practice, the problems that are encountered within the mini-courses, and methods of teaching math. Various field trips and guest speakers will be included.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Tepper.

153. ACTUARIAL SCIENCE. *Not offered, 1975-76.*

This course will deal with the mathematics of finance and its applications. Compound interest, life contingencies and population theory will be among the topics covered. The course is designed to introduce the student to the material included in the third and fourth (F.S.A.) actuarial exams. Prerequisite: Math 12 or permission.

160. PROBLEMS SEMINAR.

This course is designed to enable the student to learn an advanced mathematical subject by working challenging and motivating problems. A selection of problems will be offered from which the student may make a choice. The problems will be at any level or area of mathematics. Solutions will be presented at weekly seminars. The student may take this course in order to prepare for any of the actuarial examinations. Prerequisite: one course beyond Math 12.
Variable credit.
Modules 1-2-3-4-5. Staff.

200. ADVANCED PROJECTS.

This course is intended for students pursuing advanced projects that involve mathematics. These projects might arise from mathematics or from some other discipline. Signature required.
Variable credit. Staff.

214. MODERN ANALYSIS.

Topological and metric methods are introduced and studied. These generalize and explain many ideas first encountered in calculus. These methods will be applied to study differentiation, integration and convergence, among other topics, in greater depth. Prerequisite: Mathematics 13 or 113a or consent of the instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Poreda.

215. MODERN ALGEBRA.

This course introduces the theory of groups, rings, fields, integral domains, canonical forms and related topics. The treatment will be axiomatic with emphasis on the construction of the proofs of certain theorems. Prerequisite: 113 or consent of the instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Cline.

216. INTRODUCTION TO FUNCTIONS OF A COMPLEX VARIABLE.

This is an introductory course designed for the undergraduate science major or graduate student preparing for Math 316. Cauchy's theorem, Power series, Laurent series, the residue theorem, harmonic functions and physical applications such as problems in two dimensional flow are among the topics to be covered. The object is to convey understanding of the classical theorems of complex analysis as opposed to rigorous proofs of their most general statements.
Full course, Modules 3-4. Ms. Srinivasan.

217. PROBABILITY AND STATISTICS.

This course is designed to introduce the student to the theory and applications of probability and statistics. Techniques used to solve problems will be stressed along with the associated mathematical theory. Among the topics covered are combinatorial methods, postulates of probability, stochastic processes, probability densities, mathematical expectation, sampling distributions, estimation, hypothesis testing, regression and correlation. The syllabus for this course includes most of the material recommended for those preparing for the second (F.S.A.) actuarial examination.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Cline.

221. CALCULUS OF VARIATIONS. *Not offered, 1975-76.*

This course presents the historical development and applications of the extremely useful mathematical technique most frequently referred to as the calculus of variations. The main tool used in this course is calculus. Some of the classical problems that were solved using this technique will be illustrated as well as the modern day applications such as optimal control theory. Prerequisite: Math 13.

244. DIFFERENTIAL EQUATIONS.

First order and linear differential equations are covered. Various methods of solution are stressed, i.e. series, integrating factors, variation of parameters, etc. An introduction to partial differential equations and boundary value problems is discussed with some applications to fluid and thermal dynamics.
Full course, Modules 1-2. Mr. Tepper.

245. APPLIED MATHEMATICS.

Topics to be covered in this course are those which are applicable to the physical sciences. Topics covered include some of the following: potential theory, Fourier analysis, LaPlace transforms, eigenvalue problems, integral equations and calculus of variations.
Prerequisites: Math 13 and 113; either 145, 244 or 214.
Full course, Modules 3-4. Mr. Tepper.

247. OPERATIONS RESEARCH.

Offered through COPACE, 1975-76.

Linear models, linear programming, the simplex method, sensitivity analysis and network analysis are covered in the first two modules. Modules 3 and 4 cover dynamic programming. Prerequisites: Mathematics 12, 113 and Computer Science 101.

290. TOPICS IN ANALYSIS.

Content will be changed from year to year.
Variable credit.
Modules 1-2-3-4-5. Staff.

250. APPLIED GROUP THEORY.

The course will give an introduction to the theory of group representation (both Lie and Finite) and apply these results to detailed study of examples from physics and related fields, e.g., solid state physics, to rotation group and angular momentum, symmetry and elementary particals and applications of Lie theory to system theory. Prerequisites: Math 113 and 244. (Some background in Quantum Mechanics will be helpful).
Full course, Modules 1-2. Mr. Humi.

292. TOPICS IN TOPOLOGY.

Content will be changed from year to year.
Variable credit.
Modules 1-2-3-4-5. Staff.

293. TOPICS IN GEOMETRY.

Content will be changed from year to year.
Variable credit.
Modules 1-2-3--4-5 Staff.

298. HONORS I. Staff.

299. HONORS II. Staff.

300. SETS AND TOPOLOGY.

Offered through COPACE, 1975-76.

The foundations of set theory and the relationship of various fundamental axioms, such as Zorn's lemma and the Axiom of Choice. Point-set topology as far as the Hahn-Mazurkiewicz Theorem.

316. FUNCTIONS OF A COMPLEX VARIABLE.

This course deals with the theory of functions of one complex variable that possesses a derivative. It is intended that the student in this course be brought to the point where he or she can comprehend the existing unsolved problems as well as the historical development and applications of this field. Among the most advanced topics are conformal mapping, entire functions, geometric function theory, approximation theory and Banach spaces of analytic functions. Prerequisite: Mathematics 214 or consent of the instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

318. FUNCTIONS OF A REAL VARIABLE.

The real number system, topology, measure theory and related topics. Signature required.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Kennison.

321. ALGEBRAIC TOPOLOGY.

Introduction to algebraic topology including fibrations and coverings, homotopy and homology. The relation with category theory will be emphasized. Prerequisites: Mathematics 215 and 318 or consent of the instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

325. ADVANCED MODERN ALGEBRA.

Offered at W.P.I., 1975-76.

Group theory, including the Sylow theorems, free groups, finitely generated abelian groups. Categories and functors. Ring theory, including factorization in commutative rings, polynomial rings, modules over a p.i.d., duality, tensor products. Fields and Galois Theory, including field extensions, finite fields, cyclotomic fields, separability, the fundamental theorem of Galois theory and the general equation of degree n. Linear algebra, including canonical forms of a matrix, and bilinear forms. If time permits, the Wedderburn structure theorems for Artinian rings. Prerequisite: Mathematics 215.
Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

326. SELECTED TOPICS IN COMPLEX ANALYSIS.

Topics selected from the theory of univalent and multivalent functions, geometric function theory, zeros of polynomials and extremal polynomials. Prerequisite: Mathematics 316 or consent of the instructor.
Staff.

327. FUNCTIONAL ANALYSIS.

Staff.

330. MASTER'S THESIS.

Staff.

335. SELECTED TOPICS IN ALGEBRA.

Prerequisites: Mathematics 325 or consent of the instructor.
Staff.

341. DIFFERENTIAL EQUATIONS.

Ordinary differential equations, theory and techniques of solutions. Partial differential equations. Fourier transform, distributions and their applications.
Staff.

358b. CATEGORY THEORY.

Introduction to the basics of category theory.
Staff.

376. REPRESENTATION THEORY OF FINITE GROUPS.

Prerequisite: Mathematics 325 and consent of the instructor.
Staff.

381. SEMINAR IN COMPLEX VARIABLES.
Staff.

382a. SEMINAR IN ABSTRACT ANALYSIS.
Staff.

383. SEMINAR IN ALGEBRA.
Staff.

384. SEMINAR IN CATEGORY THEORY.
Staff.

390. READINGS IN MATHEMATICS.

Reading of the mathematical literature related to the student's research program.
Staff.

391. RESEARCH IN MATHEMATICS.

Direction of the Ph.D. dissertation.
Staff.

Music

(See Department of Visual and Performing Arts.)

Philosophy

DEPARTMENT FACULTY

Robert N. Beck, Ph.D., Professor of Philosophy, Department Chairman
Albert A. Anderson, Ph.D., Associate Professor of Philosophy
Gary E. Overvold, Ph.D., Associate Professor of Philosophy*
Stephen A. Skousgaard, Ph.D., Assistant Professor of Philosophy
Walter E. Wright, Ph.D., Associate Professor of Philosophy
Gilbert S. Markle, Ph.D., Associate Professor of Philosophy (Affiliate)**

**On leave of absence, Modules 3-4, 1975-76*
***On leave of absence, 1975-76*

UNDERGRADUATE PROGRAM

The department offers courses to students who wish to broaden their perspective and trace relations among the various fields of knowledge and to students who wish to major in philosophy.

The major consists of at least 8 full courses in philosophy which should include either Phil. 101 or Phil. 160, two courses from the Phil. 120 series and a seminar (Phil. 220-240). Also required are 6 full courses in related fields. These are determined according to the student's special interest. Course programs for majors require approval of the department chairman.

The outside field requirement in philosophy of 9 full courses (or the equivalent) requires specific course determination. Courses credited toward this requirement must be individually approved by the department chairman as part of the major's program.

It is expected that majors take at least their upper-level courses (140 and above) in philosophy on a graded basis.

Introductory courses have numbers 100-125; intermediate courses, 140-160; advanced courses, 170-190; and research courses, 200-240.

COURSES

100. PROBLEMS OF PHILOSOPHY.

Nature and method of philosophy. Application of philosophical method to contemporary personal and social problems. Detailed analysis of some typical problems in various fields of philosophy. Limited to freshmen.
Full course, Modules 3-4. Mr. Anderson.

101. INTRODUCTION TO LOGIC.

Logic as philosophy and practice. An introduction to the meaning of logical reasoning with a study of its principles and methods. An investigation of the philosophical presuppositions of logic.
Full course, Modules 1-2. Mr. Overvold.

105. PERSONAL VALUES.

Exploration of philosophical approaches to the fundamental human value problems such as truthfulness, sexual integrity, love, violence, war and death. The connection between personal value choices and ethical theories will be studied. Limited to freshmen.
Full course, Modules 1-2. Mr. Wright, Mr. Beck.

110. PROBLEMS OF PHILOSOPHY.

See description under Phil. 100. Not open to freshmen.
Full course, Modules 3-4. Mr. Beck.

111. SCIENCE AND HUMAN VALUES.

Theoretical and practical issues concerning the interrelations between science and human values. Values

in scientific method, technology and values, pure and applied sciences, science and ethical relativism. Views of man in natural and social sciences and their connections with values and methodology. Preference to freshmen.
Full course, Modules 1-2. Mr. Skousgaard.

113. FRESHMAN SEMINAR: PHILOSOPHICAL PERSPECTIVES ON SPACE.

This seminar is part of a cluster course called "Concepts of Space". It also serves as an introduction to the language and some key concepts of philosophy. Stress will be placed on architecture as a primary cultural embodiment of the notion of space in both its cognitive and valuative dimensions. Prerequisite: permission of instructor.
Full course, Modules 1-2. Mr. Anderson.

Philosophy 120 series is organized in five courses:

121. HISTORY OF ANCIENT PHILOSOPHY.

The origins of philosophical thought in the West with emphasis on the early Greeks, Plato and Aristotle. Examination of classical theories of man, society and nature providing background for later philosophical reflection.
Full course, Modules 1-2. Mr. Anderson.

122. HELLENISTIC AND MEDIEVAL PHILOSOPHY. *Not offered, 1975-76.*

Developments in Hellenistic and medieval philosophy from Epicureanism, Stoicism, Skepticism and Neo-Platonism through Augustine, Aquinas and William of Occam to the attack on scholasticism. Prerequisite: Philosophy 121, 100 or 110.
Full course, Modules 1-2.

123. HISTORY OF MODERN PHILOSOPHY.

Major thinkers and philosophical movements from the beginning of the modern period in Descartes through Hume. The two great trends in modern thought — Continental Rationalism and British Empiricism — will be examined in particular regard to their implications for, and effects upon, our contemporary view of the world. Prerequisite: one full course in philosophy.
Full course, Modules 3-4. Mr. Skousgaard.

124a,b. KANT AND THE NINETEENTH CENTURY.

A two module sequence focusing on trends in nineteenth century philosophy as a background for understanding contemporary philosophy.

a. GERMAN IDEALISM.
An introduction to selected themes in the work of some of the great German idealists: Kant, Fichte, Schelling and Hegel.
Half course, Module 1. Mr. Wright.

b. THE AFTERMATH OF HEGEL.
The dissolution of the speculative systems and the movement towards the sensuous and the concrete as exhibited in the work of Feuerbach, Kierkegaard, Marx and others.
Half course, Module 2. Mr. Wright.
(May be taken independently.) Prerequisite: two full courses in philosophy (Philosophy 123 is recommended).

125. HISTORY OF CONTEMPORARY PHILOSOPHY. *Not offered, 1975-76.*

An investigation of the major types of philosophical thought distinctive to recent philosophy: Pragmatism, Logical Positivism, Ordinary Language Philosophy, Existentialism and Phenomenology. Emphasis upon each as a coherent perspective upon experience with a focus on the style and methodology of each view. Prerequisite: one full course in philosophy (Philosophy 123 or 124 is recommended).
Full course, Modules 3-4. Mr. Overvold.

INTERMEDIATE COURSES

141. PROBLEMS OF ETHICS.

Consideration of important ethical theories to acquaint students with the problems and scope of ethics and to aid them in the formulation of an ethical outlook. Not open to freshmen.
Full course, Modules 1-2. Mr. Beck.

142. SOCIAL PHILOSOPHY.

Principles underlying social structure and functions. Examination of the goals, purposes, norms and ideals of social process, and the relation of that process to the individual good. Not open to freshmen.
Full course, Modules 3-4. Mr. Beck.

145. EXISTENTIALISM.

A study of the major philosophers in twentieth-century Existentialism with a focus on their redefinition of man in terms of his "lived world" and his nonrational capacities. Prerequisite: two full courses in philosophy.
Full course, Modules 1-2. Mr. Skousgaard.

146. KIERKEGAARD AND NIETZSCHE.

Investigation of the roots of contemporary existential thought in the nineteenth century through the analysis of major writings by Soren Kierkegaard and Friedrich Nietzsche. Emphasis on their doctrines of knowledge, existence and man. Prerequisite: one full course in philosophy.
Full course, Module 5. Mr. Overvold, Mr. Wright.

149. AESTHETICS.

Representative theories of the nature of the arts (literature, drama, music and visual arts), the creative process, aesthetic experience and art criticism such as those of Aristotle, Nietzsche, Collingwood, Fischer, Dewey,

Langer, Sartre and Arnheim. Prerequisite: one full course in philosophy.
Full course, Modules 1-2. Mr. Anderson.

150. PHILOSOPHY OF RELIGION.

The nature of religion as revealed by the examination of representative forms of religious experience. Emphasis is placed on the effect of contemporary knowledge on the understanding of the religious dimension. Prerequisite: one full course in philosophy.
Full course, Modules 3-4. Mr. Wright.

151. PHILOSOPHY OF LITERATURE.

Philosophical approaches to poetry, drama and the novel through consideration of issues such as truth in literature, the writer and society, the nature of imagination, literary style and criteria for criticism. Prerequisite: permission of instructor.
Full course, Module 5. Mr. Anderson.

153. HISTORY OF AMERICAN PHILOSOPHY. *Not offered, 1975-76.*

Survey of important philosophical ideas in America with emphasis on their relationship to the American experience. Prerequisite: one full course in philosophy.
Full course. Mr. Beck.

155. PHILOSOPHY OF SCIENCE I.

An introduction to certain problems of epistemology and metaphysics, cast into the terms and context of twentieth-century science. The questionable "ontological status" of theories is the principal point of focus. Prerequisite: one full course in philosophy.
Full course, Modules 1-2.

156. PHILOSOPHY OF SOCIAL SCIENCE.

A dialectical examination of naturalistic and phenomenological approaches to social reality. The concepts to be examined include: behaviorism, consciousness, functionalism, cultural relativism and determinism, rationality, values, reductionism and holism. Prerequisite: one full course in philosophy.
Full course, Modules 3-4.

160a, b, c. SYMBOLIC LOGIC.

A three module sequence in symbolic logic with stress on principles of deductive rigor. Some consideration of the philosophical implications of logic.

a. SENTENTIAL CALCULUS.
A basic course in the logic of sentences. Alternate proof procedures and some elementary metalogical results including completeness and consistency are discussed.
Half course, Module 3. Mr. Wright.

b. PREDICATE CALCULUS.
An extension of the results of 160a to the logic of attributes and classes. The problems of reference, truth and translation are discussed, together with the study of alternative proof procedures. Prerequisite: Philosophy 160a or equivalent.
Half course, Module 4. Mr. Wright.

c. INTERMEDIATE SYMBOLIC LOGIC.
Study of further properties of formal systems. Henkin's proof of strong completeness for first order predicate calculus, modal logics and other alternative systems will be investigated. Prerequisite: Philosophy 160a, Philosophy 160b, or a first course in symbolic logic.
Half course, Module 5. Mr. Wright.

ADVANCED COURSES

171. KANT.

Immanuel Kant viewed as a synthesis of the traditions of Continental Rationalism and British Empiricism. Prerequisite: two full courses in philosophy, including Philosophy 123.
Full course. Staff.

172. PHILOSOPHY OF MIND.

A critical examination of the "nature" or concept of mind. Related issues to be considered are: mind-body relationship, the identity theory of mind/brain, the thesis of the dualism of mind and matter and other themes that involve the philosophical examination of psychological phenomena. Prerequisite: two full courses in philosophy, preferably including at least one intermediate or advanced philosophy course.
Full course, Modules 3-4. Mr. Skousgaard.

175. METAPHYSICS. *Not offered, 1975-76.*

Clarification of the nature of metaphysical thinking and views of representative philosophers on the nature of space, time, causality, matter, force, self-identity, mind, body and freedom. Prerequisite: two full courses in philosophy.
Full course, Modules 1-2. Mr. Wright, Mr. Overvold.

177. CONCEPTS OF THE SELF. *Not offered, 1975-76.*

An investigation of several perspectives on the nature of the human self. The course will deal with the writings of such thinkers and philosophers as Plato, Aristotle, Descartes, Hume, Heidegger, Strawson, Ornstein and Castaneda. Emphasis on group discussion and interaction. Prerequisite: two full courses in philosophy.
Full course, Modules 1-2. Mr. Wright.

180. EPISTEMOLOGY.

The study of epistemology is, broadly, the study of the nature of knowledge. Within this very general heading are a host of specific topics and from that group this course will focus on the interrelations among belief, knowledge, evidence, proof, truth and also will consider the problem of skepticism. Prerequisite: two full courses in philosophy.
Full course, Modules 3-4. Mr. Overvold.

185. PHILOSOPHY OF LANGUAGE.

An examination of the concepts of reference, truth, meaning, translation, rationality, objectivity, linguistic relativism and determinism, intentionality, and linguistic

universals, in light of traditional philosophical problems about the relations between language and reality. Prerequisite: two full courses in philosophy, or permission of instructor.
Full course, Modules 1-2.

188. THEORY OF VALUE. *Not offered, 1975-76.*

Definitions of "value"; psychological and social conditions of different values; function of value judgments; nature of standards and their role in criticism — in art, science, morals. Foundations of the normative disciplines, i.e., logic, ethics, aesthetics. Prerequisite: two full courses in philosophy including a course in one of the following areas: logic, ethics or aesthetics.
Full course. Mr. Anderson.

RESEARCH IN PHILOSOPHY

200. ADVANCED TOPICS IN PHILOSOPHY.

Group discussion, individual tutorials and independent research in areas of philosophy. The independent research involves a topic of the student's choice within the designated area. Prerequisite: where appropriate, completion of regular department course in the area; two full courses in philosophy; and instructor's permission. Offerings vary each semester; variable credit. Staff.

Modules 1-2, 1975-76.
- Husserl, Modules 1-2. Mr. Overvold.
- Philosophy of Law, Modules 1-2. Mr. Beck.
- Existentialism, Modules 1-2. Mr. Skousgaard.

Modules 3-4, 1975-76.
- German Philosophy, Modules 3-4. Mr. Wright.
- Social Philosophy, Modules 3-4. Mr. Beck.
- Philosophy of Language, Modules 3-4.
- Greek Philosophy, Module 3. Mr. Anderson.
- Aesthetics, Module 4. Mr. Anderson.

201. SURSEMINAR: RESEARCH AND WRITING IN PHILOSOPHY. *Not offered, 1975-76.*

Prerequisite: permission of instructor.
Half course. Mr. Beck.

202. SURSEMINAR: PHILOSOPHICAL JOURNALS. *Not offered, 1975-76.*

Prerequisite: permission of instructor.
Half course. Mr. Beck.

203. SURSEMINAR: TEACHING IN PHILOSOPHY.

Prerequisite: permission of instructor.
Half course. Staff.

204. SURSEMINAR: READINGS IN PHILOSOPHY IN GERMAN. *Not offered, 1975-76.*

Prerequisite: permission of instructor.
Half course. Mr. Wright.

205. SURSEMINAR: PHILOSOPHY OF ARCHITECTURE.

Half course, Module 5. Mr. Anderson.

220-240. SEMINARS IN PHILOSOPHY.

Advanced studies of topics of central importance to philosophy, such as the philosophy of Whitehead, Spinoza, Plato, Hegel, the nature of the *a priori*, the problem of justice, the nature of truth, phenomenology, the philosophy of mind, the philosophy of law. Offerings vary each year; those for 1975-76 are listed below. Prerequisite: four full courses in philosophy or permission of instructor. Staff.

225. PHENOMENOLOGY.

Full course, Modules 1-2. Mr. Overvold.

226. PHILOSOPHY OF ERNST CASSIRER.

Full course, Modules 3-4. Mr. Beck.

227. PHILOSOPHY OF RELIGION.

Full course, Modules 1-2. Mr. Wright.

290. PHILOSOPHY OF EDUCATION.

Description offered in the department statement under Education.
Full course, Modules 1-2. Mr. Beck.

299. HONORS IN PHILOSOPHY.

Advanced individual study of philosophical problems. Honors includes the preparation of an acceptable thesis and a comprehensive examination. Prerequisite: consent of the department. Normally a one-year program involving two full courses. Variable credit.
Modules 1-2, 3-4. Staff.

335. STUDIES IN AMERICAN INTELLECTUAL HISTORY.

Independent studies.
Variable credit.
Modules 1-5. Mr. Beck.

Physics

DEPARTMENT FACULTY

Roger P. Kohin, Ph.D., Associate Professor of Physics, Department Chairman
Roy S. Andersen, Ph.D., Professor of Physics
Michael McClintock, Ph.D., Visiting Professor of Physics
John A. Davies, Ph.D., Associate Professor of Physics
Harvey Gould, Ph.D., Associate Professor of Physics
Christoph Hohenemser, Ph.D., Associate Professor of Physics
Albert M. Gottlieb, Ph.D., Assistant Professor of Physics

AFFILIATED FACULTY

Edward L. O'Neill, Ph.D., Professor of Physics (Affiliate)
Jerald A. Weiss, Ph.D., Professor of Physics (Affiliate)
Thomas H. Keil, Ph.D., Associate Professor of Physics (Affiliate)

The Department of Physics offers undergraduate and graduate courses which can be combined to meet a variety of student interests and needs. Formal classes (excluding readings and special topics) fall into six classes, as given below.

TYPES OF COURSES OFFERED

1)*Courses for the non-scientist.* These require high school algebra and geometry. They are designed to acquaint the student with the nature of scientific inquiry and to inform the student of the impact of science in the contemporary world. Included in this class are Physics 1 and 2. Also included is Astronomy 1.

2)*Core undergraduate courses.* This is a sequence of three one-year courses emphasizing the phenomena of physics. The first year requires no calculus, and the second and third years are taught at the level of elementary calculus. The core curriculum is designed to meet the needs of General Physics majors and Science, Technology and Society majors. Included in the sequence are Physics 11, 111 and 161.

3)*Core pre-professional courses.* A sequence of three undergraduate courses paralleling the core undergraduate courses but designed for the pre-professional science major. This sequence includes Physics 12, 112 and 162. After the first year, students attend the lectures of the core undergraduate courses, but a substantial part of the work is conducted in weekly tutorials in which the subject matter is explored in greater depth using more sophisticated mathematical techniques. These courses prepare the student for further work in physics at the advanced undergraduate-graduate level. Students in these courses must be prepared to work independently.

4)*Laboratories.* A sequence of ten modules of laboratory designed to meet the needs of all types of students. Included are Physics 19, 119.1, 2 and 219.2. Laboratory work beyond these courses may be taken in the form of research participation as Physics 188 or 231.

5)*Advanced undergraduate courses.* Courses beyond the three year core-sequence that are at the beginning graduate level. They are designed for undergraduate science students, particularly physics majors, who intend to enter graduate school. Included are Physics 201, 205 and 209.

6)*Graduate courses.* Graduate courses fall into two classes, basic and advanced. The basic graduate courses, required for the Ph.D., are Physics 301, 305, 309 and 310. Advanced courses include Physics 311, 312, 314 and 320. Most advanced courses are given in alternate years.

UNDERGRADUATE MAJOR OPTIONS

A. *General Physics*

This is a major intended for students who wish to study physics solely as a liberal art, and who do not intend to enter graduate school. It allows maximum opportunity for electives in other fields. It is suitable as a preparation for teaching, business and a variety of professional schools. The minimum requirements for this major are Physics 11, 19, 111, 161, Mathematics 13 and three additional elective courses from science, mathematics and computer science. A student may replace a required course with an appropriate more advanced course with the approval of the department undergraduate advisor.

B. *Science, Technology and Society - Physics Option*

This is a major intended for students who are interested in careers that deal with the interface between science and society. Details of the program are given in this catalog under the title Science, Technology and Society. Students choosing the Physics option under the program are advised to select Physics 11, 19 or 119.1, 111 and 161.

C. *Physics*

This is a standard, pre-professional program intended for those who plan graduate study in physics or an allied science. The program requirements are eight full courses in physics beyond Physics 12 and 19 (normally including 112, 162 and 119.1, 2), Mathematics 13 and one additional year of mathematics beyond Mathematics 13. In addition, the student is urged to take one year of chemistry and a second additional year of advanced mathematics. With permission of the department undergraduate advisor, a first year student with a sound background in physics may be admitted to register for Physics 111 or 112. This procedure will permit completion of the requirements for the major by the end of the junior year, and leaves the senior year open for independent study and/or honors.

UNDERGRADUATE HONORS

A qualified undergraduate in any of the major options above is encouraged to participate in the Physics Honors Program. During the junior and senior year, the Honors student conducts an experimental or theoretical research project under the guidance of a faculty member. This work is submitted to the department as an Honors Thesis. Recommendation for a degree with Honors in Physics is determined by the quality of the thesis and the performance of the student in an oral defense of his thesis. An Honors candidate must maintain an average of B- in physics, chemistry and mathematics courses. Students may gain credit for Honors work by registering for Physics 231 or 232.

GRADUATE PROGRAM

The Department of Physics offers the M.A. and Ph.D. degrees in Physics, and jointly with the Department of Chemistry, a Ph.D. in Chemical Physics. Departmental research is concentrated in the experimental and theoretical study of condensed matter with emphasis on phase transitions.

At entrance, graduate students are given a placement examination which tests their knowledge of undergraduate physics. A student failing this examination may be required to take a remedial program before entering fully on the graduate program, and may be asked to fulfill the requirements of the M.A. degree before proceeding to the Ph.D.

To receive the Ph.D. the student must satisfy the university residence and course requirements, pass with B or better the basic graduate courses Physics 301, 305, 309 and 310, and six modules of Physics 303. To qualify for Ph.D. research, the student must pass four oral examinations in the subject matter of the basic graduate courses and an additional comprehensive oral examination. The student must also pass at least one graduate course in a subject other than physics, demonstrate literacy in a foreign language and computer programming and complete a dissertation based on an original piece of research. Students entering with advanced standing and transferable credit are encouraged to demonstrate their proficiency in core graduate courses through examination.

To receive the M.A. the student must satisfy the university residence and course requirements, pass four semesters of the basic graduate courses, Physics 301, 305, 309 and 310 and two modules of Physics 303, and pass two related oral examinations. He/she must also complete a thesis based on an original piece of research.

Those interested in further information on research opportunities in the department should request the brochure "The Graduate Program and Research in Physics at Clark." Those desiring more detail on graduate requirements and their timing should request a copy of "The Physics Graduate Student Handbook." Both are available from the department chairman.

Applicants for admission should know that various forms of financial aid are available, and that the department considers provision of such aid an important responsibility. Application forms for admission and financial aid may be requested from the chairman of the Physics Department.

COURSES

Astronomy 1. EXPLORING THE UNIVERSE.

Refer to course description under Astronomy.
Full course, Modules 1-2. Mr. Andersen.

1. PHYSICS FOR ARTISTS, POETS AND PHILOSOPHERS.

A two-module introduction to the history, methodology and achievements of physics with an appreciation of its social and cultural influences. The course will stress modern ideas of space and time, Einstein's theory of relativity, current theories of cosmology and quantum theory. Mathematical tools necessary are high school algebra and geometry. Three class meetings and one laboratory per week. Open to freshmen.
Full course, Modules 3-4. Mr. Davies.

2. THE PHYSICS OF EVERYDAY EXPERIENCE.

A two-module introduction to the basic physical concepts necessary for a fundamental understanding of our everyday observations of the physical world, and the nature of discovering, reasoning and concept-formation in the physical sciences. Topics will include the physics of hearing and seeing, matter in motion, heat, electricity and magnetism, the nature of matter and a study of man's place in the physical universe. The course is directed towards the non-scientifically oriented student. Although recent advances in science and technology will be discussed, the emphasis in Physics 2 is a fundamental understanding of everyday experience in contrast to Physics 1 in which the emphasis is on developments in physics in the 20th century. Three lectures per week plus an open, informal laboratory.
Full course, Modules 1-2. Mr. Gottlieb.

11. INTRODUCTORY PHYSICS.

A non-traditional, introductory course designed for students majoring in science. Stresses simplicity and self-consistency of physical models and mathematical laws in explaining a variety of phenomena. Topics will include statistical physics, relativity and quantum physics in addition to mechanics, electricity and magnetism. Although calculus is not a prerequisite, Physics 11 is a rigorous and challenging preparation for advanced courses in the sciences. Together with Physics 19 Laboratory (see below) it satisfies the requirements for majors in General Physics, Biology and Science, Technology and Society. Three 50-minute lectures per week plus a discussion once a week for two course credits.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Kohin.

12. INTRODUCTORY PHYSICS.

An introductory course for science majors and others who require a mathematically complete approach to the material and who expect to continue their study of physics beyond the introductory year. Problem solving is emphasized and independent work by the student is expected. Three lectures and one tutorial per week during Modules 1-4 for two course credits. Credit for both Physics 11 and 12 is not granted.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Andersen.

19. INTRODUCTORY LABORATORY.

A laboratory course designed to accompany Physics 11. Emphasis on physical measurements, techniques and the ideas of applied mathematics needed to interpret them. One meeting per week throughout Modules 1-4. Co-requisite: Physics 11 or 12. One-half course credit.
Quarter course, Modules 1-2.
Quarter course, Modules 3-4. Mr. Gottlieb.

111. INTERMEDIATE PHYSICS.

A second course in physics designed to follow Physics 11. It is intended for the general student interested in the concepts, methods and applications of physics, and satisfies the requirements of the Science, Technology and Society Program. The course presumes mathematics at the level of elementary calculus, and will develop other mathematical tools as needed. Topics covered are

electricity and magnetism, wave and optical phenomena, thermodynamics and kinetic theory. Applications to man-technology problems. Open to freshmen with consent of the department undergraduate advisor. Co-requisite: Mathematics 12. Two course credits, may be entered in Modules 3-4.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Kohin.

112. INTERMEDIATE PHYSICS.

A second course in physics for science majors, designed to follow Physics 12. The subject matter and general lectures are the same as Physics 111. Over half the work is conducted in relation to tutorials in which the subject matter is explored in greater depth. The student should be prepared to work independently. Co-requisite: Mathematics 13; prerequisite: Physics 12 or permission of the department undergraduate advisor. Credit for both Physics 111 and 112 is not granted.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Kohin.

119.1. ELECTRONICS LABORATORY.

An introductory laboratory course in electronics, the goal of which is to build and understand several simple circuits using discrete as well as integrated solid state elements. The course will begin with fundamentals of AC and DC circuit theory and the use of basic test instruments such as oscilloscopes. Special emphasis will be given to logic circuitry and operational amplifier techniques. The course may replace Physics 19 as an introductory laboratory for those who are qualified. Two laboratories per week during Modules 1-2. Open to freshmen with consent of the instructor.
Full course, Modules 1-2. Mr. Hohenemser.

119.2. PHYSICAL INSTRUMENTATION LABORATORY.

An introduction to modern physical research instrumentation. The course will involve each student in one or more projects. The student will be expected to design, build and assemble the experimental apparatus, using his background in electronics. Departmental facilities such as the machine shop and the electronics stockroom will be available. The course will emphasize measurements on fundamental particles, such as protons, muons, gamma rays, electrons and positrons. One lecture and two laboratory periods per week Modules 3 and 4. Prerequisite: Physics 119.1 or equivalent.
Full course, Modules 3-4. Mr. Hohenemser.

161. ATOMIC AND NUCLEAR PHYSICS.

A third course in physics, designed to follow Physics 111. It is intended for the general student who wishes to learn in detail about the structure of atoms and nuclei. To achieve its goal, the course will include an introduction to quantum mechanics. The course presumes mathematics at the level of elementary calculus, and will develop other mathematical tools as needed. Applications to the problems of energy technology and environmental radiation will be given. Duration: four modules. Prerequisite: Physics 111, Mathematics 12.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Davies.

162. ATOMIC AND NUCLEAR PHYSICS.

A third course in physics for science majors, designed to follow Physics 112. The subject matter and general lectures are the same as Physics 161. Over half the work will be conducted in relation to tutorials in which the subject matter will be explored in greater depth. The student should be prepared to work independently. Prerequisite: Physics 112, Mathematics 13. Credit for both Physics 161 and 162 is not granted.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Davies.

170. SEMINAR IN METHODS AND MATERIALS IN PHYSICS AND MATHEMATICS TEACHING.

This course is identical to Mathematics 150 with additional laboratory experiences in physics. The course is designed for students seeking certification for high school teaching in physics through the Department of Education. Offered Modules 1-2-3-4 for two course credits for the year.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Tepper, Mr.Gould.

188. INDEPENDENT PROJECTS.

Variable credit.
Modules 1-2-3-4. Staff.

201. CLASSICAL THEORY OF FIELDS.

A course designed to prepare the physics major for graduate work in physics. Lectures are the same as in Physics 301, but evaluation is separate. Prerequisite: Physics 112, 162. Three quarters of a course credit for each module 1 through 4. Any module may be taken separately.
Three-quarter course value per module,
Modules 1-2-3-4. Mr. O'Neill, Mr. Weiss.

205. QUANTUM MECHANICS.

A course designed to prepare the physics major for graduate work in physics. Lectures are the same as in Physics 305, but evaluation is separate. Prerequisite: Physics 112, 162.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Gould.

209. STATISTICAL MECHANICS. *Not offered, 1975-76.*

A course designed to prepare the physics major for graduate work in physics. Lectures are the same as in Physics 309, but evaluation is separate. Prerequisite: Physics 112, 162.
Full course.

219.2. PHYSICAL INSTRUMENTATION LABORATORY.

An introduction to modern physical research instrumentation. The course is the same as Physics 119.2 except that interpretation of experiments must be at the advanced undergraduate or beginning graduate level. Undergraduates who have completed 119.2 may register for 219.2.
Full course, Modules 3-4. Mr. Hohenemser.

230. DIRECTED READINGS IN PHYSICS.

Directed readings in physics to provide the special needs not covered in regular courses.
Variable credit.
Modules 1-2-3-4. Staff.

231. SPECIAL PROJECTS IN EXPERIMENTAL PHYSICS.

Independent laboratory projects done under the guidance of a faculty advisor.
Variable credit.
Modules 1-2-3-4. Staff.

232. SPECIAL PROJECTS IN THEORETICAL PHYSICS.

Independent projects in theoretical physics done under the guidance of a faculty advisor.
Variable credit.
Modules 1-2-3-4. Staff.

301. CLASSICAL THEORY OF FIELDS.

An integrated year course in classical mechanics and electrodynamics. Topics covered include variational principles, canonical transformation, Hamilton-Jacobi theory, special theory of relativity, Lorentz transformations and the Lorentz group, the stress tensor and continuous media, Maxwell's equations, electromagnetic potentials, boundary value problems, radiation theory and self-interactions. Triple course value.
One-and-one-half course, Modules 1-2.
One-and-one-half course, Modules 3-4.
Mr. Weiss, Mr. O'Neill.

303. RESEARCH APPRENTICESHIP.

Direct participation in each of the experimental and theoretical research groups of the department. The student spends one module in each research group. Ph.D. students should enroll in this course for six modules, M.A. students for two modules.
One-half course value per module.
Modules 1-2-3-4. Mr. Gould.

305. QUANTUM MECHANICS.

A comprehensive introduction to non-relativistic quantum mechanics. Topics include the superposition principle, linear vector spaces, the Schrödinger and Heisenberg pictures, symmetries, angular momentum, scattering theory, perturbation theory. Applications to atomic, nuclear and solid state physics.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Gould.

309. STATISTICAL MECHANICS. *Not offered, 1975-76.*

A two-module course in thermodynamics, statistical mechanics and kinetic theory at an advanced level. Topics covered include ensemble theory, density matrix, ideal gases, Fermi and Bose distributions, Debye theory, non-ideal gases, molecular field theory. Boltzmann equation, Onsager relations.
Full course.

314. THEORY OF MANY PARTICLE SYSTEMS.
Not offered, 1975-76.

The equilibrium and transport properties of many body systems are studied at zero and non-zero temperatures using the formalism of thermodynamic Green's functions. Applications are made to the electron gas, the degenerate Bose and Fermi gas and superconductivity.
Full course. Mr. Gould.

316. MAGNETIC RESONANCE SEMINAR.

Survey of current research using various resonance techniques. One-half course credit throughout the year. One-eighth course value per module.
Modules 1-2-3-4. Mr. Andersen.

317. SOLID STATE SPECTROSCOPY.
Not offered, 1975-76.

Theoretical and experimental review of the physics of solids observed using spectroscopic methods.
Full course. Mr. Hohenemser.

325. RESEARCH SEMINAR.

A student participation seminar in current research problems. One-half course value for four modules.
Half course, Modules 1-2-3-4. Staff.

330. TOPICS IN EXPERIMENTAL PHYSICS.

A specific topic in experimental physics is considered at the research level. Topics are selected on the basis of current interest.
Variable credit.
Modules 1-2-3-4. Staff.

335. TOPICS IN THEORETICAL PHYSICS.

A specific topic in theoretical physics is considered at the research level. Topics are selected on the basis of current interest.
Variable credit,
Modules 1-2-3-4. Staff.

340. COLLOQUIUM.

Weekly invited lecturers speaking on research topics of current interest. Required for all graduate students.
No credit.

Modules 1-2-3-4. Mr. Gould, Mr. Andersen.

350. RESEARCH.

Variable credit,
Modules 1-2-3-4. Staff.

Psychology

DEPARTMENT FACULTY

Seymour Wapner, Ph.D., G. Stanley Hall Professor of Genetic Psychology, Department Chairman
Mortimer Appley, Ph.D., Professor of Psychology, President of the University
Robert W. Baker, Ph.D., Professor of Psychology
Roger Bibace, Ph.D., Professor of Psychology
Tamara Dembo, Ph.D., Professor of Psychology, Emeritus
Bernard Kaplan, Ph.D., Professor of Psychology
Donald G. Stein, Ph.D., Professor of Psychology*
Ina C. Uzgiris, Ph.D., Professor of Psychology
Morton Wiener, Ph.D., Professor of Psychology
Leonard E. Cirillo, Ph.D., Associate Professor of Psychology
Joseph H. deRivera, Ph.D., Associate Professor of Psychology
Rachel Falmagne, Ph.D., Associate Professor of Psychology
James D. Laird, Ph.D., Associate Professor of Psychology
David A. Stevens, Ph.D., Associate Professor of Psychology
Nicholas S. Thompson, Ph.D., Associate Professor of Psychology, Adjunct Associate Professor of Biology
William Damon, Ph.D., Assistant Professor of Psychology
Joseph Schmuller, M.A., Assistant Professor of Psychology
John A. Whiteside, Ph.D., Assistant Professor of Psychology
*On Leave of absence 1975/76.

ADJUNCT FACULTY
Edward E. Sampson, Ph.D., Professor of Sociology and Adjunct Professor of Psychology
David Zern, Ph.D., Associate Professor of Education and Adjunct in Psychology

AFFILIATED STAFF
D. Frank Benson, M.D., Professor of Psychology (Affiliate)
Donald M. Broverman, Ph.D., Affiliate Professor of Psychology
Nelson M. Butters, Ph.D., Affiliate Associate Professor of Psychology
Laird S. Cermak, Ph.D., Affiliate Assistant Professor of Psychology
Robert A. Ciottone, Ph.D., Affiliate Assistant Professor of Psychology
Shannon T. Devoe, Ph.D., Affiliate Research Associate
David Finkel, Ph.D., Affiliate Assistant Professor of Psychology
John Frey, M.D., Clinical Associate
Harold Goodglass, Ph.D., Affiliate Professor of Psychology
Davis H. Howes, Ph.D., Affiliate Professor of Psychology
Irving Hurwitz, Ph.D., Affiliate Professor of Psychology
Edith F. Kaplan, Ph.D., Affiliate Associate Professor of Psychology
Deborah Kellett, Ph.D., Clinical Associate
Allan F. Mirsky, Ph.D., Affiliate Professor of Psychology
David Myerson, M.D., Clinical Associate
Marlene Oscar-Berman, Ph.D., Affiliate Assistant Professor of Psychology
Lawrence Peterson, Ph.D., Clinical Associate
Harold Reiss, M.D., Clinical Associate
Jeffrey Rosen, Ph.D., Affiliate Associate Professor of Psychology
David Rosenfield, Ph.D., Affiliate Assistant Professor of Psychology
Robert B. Shilkret, Ph.D., Affiliate Research Associate
William Vogel, Ph.D., Affiliate Professor of Psychology
Mary Walsh, Ph.D., Clinical Associate
Richard Walton, M.D., Clinical Associate
Edgar B. Zurif, Ph.D., Affiliate Assistant Professor of Psychology

UNDERGRADUATE PROGRAM

Course Numbers. The undergraduate course numbering system has been reorganized and simplified. Ranges of course numbers now have specific meanings according to the following key:

Range	*Meaning*
100-109	Courses all majors must take (General, Quantitative Methods)
110-149	Primarily freshman and sophomore survey courses; psychology as a life science
150-189	Primarily freshman and sophomore survey courses; psychology as a social science
190-199	Special freshman and sophomore courses
200-214	Laboratory courses
215-229	Research courses
230-234	Primarily junior and senior survey courses; psychology as a life science
234-239	Primarily junior and senior survey courses; psychology as a social science
240-259	Primarily junior and senior specialized seminars (may not be taken for graduate credit without special permission)
260-289	Primarily junior, senior and graduate specialized seminars (may be taken for graduate credit without special permission)
290-299	Special courses (honors, directed readings, research)

Major Requirements. The new expanded major in psychology, which applies to students declaring their major after September 1, 1974, consists of both psychology and related course requirements. The psychology requirements are designed to insure exposure to one of the most basic distinctions in contemporary psychology, that of psychology approached as a life or a social science: to insure some familiarity with experimental and observational methods (laboratory and practicum requirement); to provide background in essential quantitative skills (statistics requirement — Psychology 105); and to guarantee several contacts with faculty in advanced, small-enrollment seminars.

The related requirement of two minors reflects the conviction of the department that all academic areas are actually or potentially related to psychology, but also that scholarship involves, at some point, studying subject matter in considerable depth.

1. *Psychology Courses*

Total of at least eight full-course equivalents, including:

a. 101 General Psychology
b. 105 Quantitative Methods
c. One full-course equivalent from range 110-149 or 230-234 (Survey courses: psychology as a life science)
d. One full-course equivalent from range 150-189 or 235-239 (Survey courses: psychology as a social science)
e. Two full-course equivalents from range 200-229 laboratory and research courses)
f. Two full-course equivalents from range 240-289 (upper level seminars)

2. *Related Courses*

Related courses are defined in terms of minors. A minor consists of at least four full-course equivalents in a single area or department. Two minors must be chosen from the following areas or departments:

Biology
Chemistry
Engineering, Applied Math, or Computer Science
Economics
Education
English
Foreign Languages and Literatures (includes Linguistics)
Geography
Government and International Relations
History
Mathematics
Philosophy
Physics
Science, Technology and Society
Sociology
Visual and Performing Arts

There are two restrictions on permissable course sequences within an area or department:

a. In the case where a department offers more than one introductory course, only the course or courses designed to prepare students for further work in the area may be taken for related credit. In most departments, this excludes introductory courses designed for non-majors. Detailed information about this restriction may be obtained from the Psychology Department.

b. The courses must form a coherent sequence or program within the context of the department in which a minor is taken. In most cases, this will be self-evident. However, in doubtful cases the student must consult his or her psychology advisor and the department concerned.

The Honors Program. Honors work in psychology is available to seniors who have demonstrated high scholastic achievement and the ability to work independently in scholarly situations. Students may seek admission to the Honors Program by requesting the faculty member, under whose direction they intend to do research work, to submit their name to the full faculty for consideration. Students in the Honors Program carry out an independent empirical research project under the sponsorship of one or more faculty members. This research provides basis for a thesis which, upon completion, is presented and defended by the student before an Examining Committee of faculty members. On the basis of the report of the Examining Committee and the student's advisor for the project, the department may recommend to the College Board that the student be awarded Departmental Honors at one of the following levels: Highest Honors, High Honors or Honors in Psychology.

Students preparing for graduate work should also obtain a reading knowledge of French, German or Russian.

GRADUATE PROGRAM

General Requirements. The department admits to graduate work only those students who plan to enroll in the Ph.D. program on a full-time basis. The overall aim of the graduate program is to provide the student with a general integrated background covering the various areas of psychology. Within these emphases there are several specialized programs available and these are described briefly below. It should be noted that none of these programs are narrowly defined and that students can move back and forth among them relatively easily. In addition, beyond the relatively minimal requirements outlined below, students are not required to do any particular activities. To prevent some students from floundering in this "open" atmosphere, each student is assigned an advisor; students have the opportunity to discuss their programs with their advisors and to seek guidance whenever they are in doubt as to the best course of action. While the program makes it possible for a student to pursue scholarly activity in collaboration with one or more faculty members, it also includes the satisfactory completion of the following more formal requirements to obtain the Ph.D. degree.

Course Work. Students ordinarily are expected to take four courses in each semester for their first two years, including in their first year Experimental Methods (301) and Quantitative Methods (302). In subsequent years, students continue to enroll in a full program which ordinarily includes two or three content courses, research and reading courses, etc. A total of at least 18 one-semester courses are required for admission to candidacy for the Ph.D. of which at least two must be from among a group including personality, social, developmental, phenomenological and cognition, and at least two must be from among the group including physiological psychology, learning, perception and animal behavior.

In order to provide a basis for evaluation of students' progress early in their career, all students are required to write two papers (or equivalent) during each of their first four semesters, except that they need not write such papers during the semester in which they complete their M.A. thesis. Papers may be required by instructors in all or none of a student's courses. In the latter case, the student is required to submit papers in a minimum of two courses. Early in the semester, before writing the paper, the student should discuss the proposed content with the instructor. In some cases, the instructor may substitute some other "evaluatable performance" (e.g., an examination), for a paper. Note that it is the student's responsibility to ensure that the instructors in at least two of his courses understand that he intends to submit these papers to them. It is the instructor's responsibility to define what constitutes an adequate fulfillment of this requirement. If students have any questions they should consult their instructor.

Teaching apprenticeship program. All students are expected to become involved in teaching as apprentices. Since many students ultimately become college and university teachers, acquaintance with the demands and techniques of teaching over a range of courses is considered an important part of their graduate training. Ordinarily, a student might spend an average of 3 to 6 hours a week in an apprenticeship.

Qualifying examination in quantitative methods. All students are required to demonstrate competence in quantitative methods by satisfactory performance on a qualifying examination in that area. The examination is normally taken at the end of the student's first year, at the completion of the course in quantitative methods.

M.A. degree. The M.A. degree is awarded after satisfactory completion of at least eight one-semester courses or their equivalent, an M.A. thesis based on the collection and analyses of data, and an oral examination on the thesis. The requirements for the M.A. degree are to be completed within the first two years of graduate work and students who have not completed their M.A. degree by that time will not be permitted to enroll for the third year.

Language requirement. All students are required to demonstrate their ability to translate professional material in a foreign language. The examination will require that the student translate a relatively brief passage, in a relatively brief time, with the aid of any materials the student wishes. Students are expected to have met this requirement before admission to candidacy for the Ph.D.

Major paper and oral examination. This paper, ordinarily to be written by the end of the third module of the student's third year, is expected to demonstrate the student's mastery of the research and theory in his area of specialization. An oral examination of this material will also be held shortly after the paper has been submitted.

Admission to candidacy. Satisfactory completion of the above requirements is necessary for admission to candidacy for the Ph.D. degree.

Ph.D. dissertation. The student demonstrates his ability to conduct independent research (under the supervision of a dissertation committee) by the presentation of an acceptable dissertation.

Ph.D. oral examination. Following submission of the dissertation to the department, a final oral examination is held in which the student presents and defends his/her dissertation and shows his/her competence in a general field of psychology as well as in his/her area of specialization.

SPECIAL TRAINING PROGRAMS

Training Program in Clinical Psychology. The Clinical Psychology Training Program which aims to provide students with competence in clinical methods as an integral part of their scholarly pursuits, requires, in addition to the other usual departmental requirements, the satisfactory completion of the Clinical Methods sequence; participation in the Psychological Services Center; completion of a year's internship in an agency approved by the American Psychological Association. Evidence of proficiency in clinical psychology through review of past clinical work carried out by the student or through examinations based on the assignment of a case specifically for this occasion will be required.

The goal of the clinical training program is to train scholars who can effectively function as scientists and/or professionals in different types of academic and/or clinical settings with diverse populations. All graduate students, including clinical students, are required to demonstrate mastery of general theoretical principles and methodologies in psychology. Within the overall framework of the clinical training program, there is, in addition to the more traditional opportunities, opportunity for training in the following realms:

a) Child clinical (including the child's personality and cognitive disabilities in the context of family and school)
b) Human neuropsychology (including clerkships and internships in the Boston V.A. Aphasia Unit, in addition to the seminars and clinical practica offered yearly)
c) Family interactions (including consultation with the Department of Family Practice, U. Mass. Medical School)

The Psychological Services Center was established in 1950 as a training center for doctoral candidates in clinical psychology and to offer psychological services to the Clark community. Undergraduate students have, over the years, made extensive use of the diagnostic and therapeutic services offered by the Psychological Services Center. Graduate students enrolled in the clinical training program are required to participate under close supervision in the Psychological Services Center for three years. Clients who require psychodiagnosis by tests are assigned to clinical students who are beginning their second year in the program. At that time, a clinical student may also elect to start carrying a client in psychotherapy. Third year clinical students are usually assigned two therapy cases. In the fourth year, the clinical student does intake interviews in addition to the continuation of psychodiagnosis by tests and psychotherapy. All participating clinical students are required to attend clinic conferences. Current regulations, which are sensitive to changing sources of student financial support, allow a clinical student to opt out of one of the two advanced levels of Psychological Services Center participation if the student meets certain criteria. This is usually the case when a clinical student, with faculty approval, takes a clinical position for financial reasons. The position must clearly allow the student to obtain what the faculty considers to be the equivalent of the supervised clinical training they would ordinarily have obtained through the Psychological Services Center. For further information, write to the director of the program, Dr. Roger Bibace.

Developmental Psychology Program. This program is designed to prepare students for a career in research, teaching and scholarly activity in developmental psychology. It strives to impart competence in the experimental and comparative analysis of psychological development as well as sophistication regarding theoretical issues involved. The subject matter ranges over the life cycle, from studies of infancy to studies of senescence, and covers a wide spectrum of behavioral phenomena in the areas of cognitive, language, social emotional and aesthetic development. These phenomena may be studied in populations such as normal children, adults, the aged, various pathological populations, lower animal species and comparatively across populations, across different age levels or through the analysis of changes in behavior with age or as a function of particular experiences. Such studies may be conducted in the department or through arrangements with the Parents' Cooperative Nursery School at Clark University, the Worcester Public School System, Worcester State Hospital and other institutions around Worcester and Boston. The program also encourages the application of developmental principles, concepts and methods to problems in general experimental psychology, psychotherapy, social psychology and so on. For further information, write to the director of the program, Dr. Bernard Kaplan.

Social Psychology Program. The major focus of the social program is on the development of theoretical frameworks for understanding persons, their relationships and the transactions between these relationships and the nature of society. Conventional experimental work in areas such as verbal and non-verbal communications, socialization, attribution processes, self-concepts and interpersonal relations is going on in the department. Less traditional emphases include the study of the phenomenology of social processes, and the ethological and genetic approaches to understanding social behavior. Uniting these diverse activities is a common concern with the theoretical and metatheoretical structures which may enable us to understand social phenomena and the philosophical bases for these conceptualizations. For further information, write to the director of the program, Dr. Joseph deRivera.

Experimental Psychology Program. Training in experimental psychology is available in a variety of areas, including perception, human learning and cognition, animal learning and motivation, physiological, comparative animal behavior and ethology. While students often specialize in one area, they are encouraged to develop competence in several areas. Students interested in neuropsychology, psychopharmacology, electrophysiology and neurochemistry have utilized for research and training not only our own laboratories, but also other specialized facilities in such institutions as Worcester State Hospital, Boston Veteran's Administration Hospital and several non-profit research laboratories in the area. Since our experimental programs are rather broad, those interested in more information should write to the department chairman, Dr. Seymour Wapner.

Rehabilitation Research Training. In conjunction with all other areas of specialization, rehabilitation research training is available. This training is designed to prepare students for investigations of psychological problems as they occur in everyday life. Emphasis on development of novel techniques and concepts is the main feature of the training. An integral part of the training is an apprenticeship-practicum during which the various phases of research in real-life settings are examined under the guidance of a staff member. This training is especially pertinent to those who are interested in social-emotional and value problems of handicapped and non-handicapped people. For further information, write to Dr. Tamara Dembo.

Interdisciplinary Work. The department recognizes the interest of some students to undertake study and research which cuts across disciplines or areas that now exist. Interdisciplinary activity by students is feasible at Clark inasmuch as some members of the Psychology faculty are now, or recently have been, engaged in activities with faculty of other departments.

Applicants for graduate study in psychology, who are interested in securing more detailed information concerning the department and its programs, are urged to write to the department for a brochure, "Information on the Graduate Program in Psychology."

THE HEINZ WERNER INSTITUTE OF DEVELOPMENTAL PSYCHOLOGY

Associated with the department is the Heinz Werner Institute of Developmental Psychology, which has three aims: first, to integrate various research programs dealing with developmental problems; second, to bring to Clark University scholars, teachers and research workers from disciplines for which developmental problems are pertinent such as anthropology, biology and certain areas of medicine; third, to train research workers on post-doctoral levels in the comparative-developmental approach to behavior. Information regarding post-doctoral work at the Institute may be obtained by writing to Dr. Bernard Kaplan.

COURSES

101. GENERAL PSYCHOLOGY.

Introduction to the principles of human behavior. No prerequisite. Unless otherwise noted, this course is a prerequisite to all other psychology offerings.

Full course, Modules 1-2. Mr. Wapner in
conjunction with
Ms. Falmagne, Ms. Uzgiris, Mr. Baker, Mr. Bibace,
Mr. Cirillo, Mr. Damon, Mr. deRivera, Mr. Kaplan,
Mr. Laird, Mr. Schmuller, Mr. Stevens,
Mr. Thompson, Mr. Whiteside, Mr. Wiener.
Full course, Modules 3-4.

105. QUANTITATIVE METHODS.

The theory of experimental inference and the logic of experimental design.

Full course, Modules 1-2. Mr. Schmuller.
Full course, Modules 3-4. Ms. Falmagne.

115. THE "EVOLUTION" OF HUMAN BEHAVIOR.

Not offered, 1975-76.

A critical analysis of the "evolutionary" writings of Ardrey, Morris, Lorenz, Fox, Alland, Wickler, Morgan, Eibl-Eibesfeldt and others. One lecture and two section meetings a week. Sections limited to 20. No prerequisite.

Mr. Thompson.

120. INTRODUCTION TO HUMAN LEARNING AND COGNITION.

Not offered, 1975-76.

Introduction to the major theories, basic concepts and principal phenomena in the areas of learning, memory, problem solving and language. The course is aimed at providing a (simplified) formulation of the central questions and issues in these areas, an introduction to the experimental method for studying them and an overview of the major findings.

Ms. Falmagne.

130. PSYCHOLOGY OF LEARNING.

Methods and findings in the study of learning are discussed, with emphasis on their relation to theories of learning. Selected controversial issues are examined.

Full course, Modules 3-4. Mr. Stevens.

140. SENSATION AND PERCEPTION.

An introductory course that includes exposure to the basic concepts of sensory physiology and sensory processes. Emphasis is on auditory and visual perception, but all six major senses are considered. The course is aimed at providing a solid background in this, the oldest area of experimental psychology, but also deals with such topics as the relation between perception and aesthetics (both of the everyday and concert-hall variety), and the development and subsequent degeneration of sensory and perceptual capabilities that occur between birth and death.

Full course, Modules 1-2. Mr. Whiteside.

141. PRIMATE SOCIAL BEHAVIOR.

The study of the social behavior of monkeys and apes highlights central problems in psychological, zoological and anthropological approaches to behavior. It also has important implications for the past evolution and present nature of man's sociality.

Full course, Modules 1-2. Mr. Thompson.

150. INTRODUCTION TO CHILD PSYCHOLOGY.

The development of intellectual and social functioning in the child will be discussed. Theoretical approaches to conceptualizing change in the developing child will be emphasized: psychoanalytic, Piagetian and behavioristic approaches will be contrasted.

Full course, Modules 1-2. Ms. Uzgiris,
Full course, Modules 3-4. Mr. Whiteside.

162. PSYCHOANALYTIC INTERPRETATION OF BEHAVIOR.

Psychoanalytic contribution to the understanding of human behavior and conflicts. Limited to 40. No prerequisite.

Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Bibace.

169. THE PSYCHOLOGY OF LOVE AND HATE.

An examination of how the emotions of love and hate are manifested in infancy, childhood, adult life and in social-collective phenomena. The course will deal with related emotions such as envy, greed, jealousy, despair, etc. Permission of the instructor required. Also listed U.P. 169.

Full course, Module 5. Mr. Kaplan.

170. INTRODUCTION TO SOCIAL PSYCHOLOGY.

An examination of the relationship between the individual and the social system as understood through the theories, methods, findings and applications of social psychology. Also listed as Sociology 105.

Full course, Modules 1-2. Mr. Sampson.

172. PSYCHOLOGY OF PERSONALITY.

Consideration of various theoretical approaches, including psychoanalytic, behaviorist and self theories, and of research work in areas such as anxiety, stress, unconscious processes, emotion and motivation.

Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Laird, Staff.

173. ABNORMAL PERSONALITY.

A descriptive survey of the major forms of psychological disturbances with consideration of their causes and their significance for personality theory. The principal disturbances included are: mental retardation, behavioral effects of central nervous system pathology, psychosomatic conditions, character disorders, psychoneuroses and psychoses.

Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Baker.

184. PHENOMENOLOGICAL PSYCHOLOGY.

The description and analysis of experience, particularly emotional experience. Behavior is considered as an independent rather than a dependent variable. We examine the implications of concepts such as assertion, commitment, identification and liberation, and search for the essential structures of experience.
Full course, Modules 3-4. Mr. deRivera.

185. HUMANISTIC PSYCHOLOGY.

Humanistic psychology is concerned with knowledge about personal development, creative transactions and the establishment of conditions for realizing human values. Ideas in this field will be tested by seeing whether or not they apply to ourselves. Therefore, this course has a series of "laboratories" and the student should be willing to be a member of a small group and participate in projects that range from spiritual work to the work of changing our society. Interested students should see the fuller description in Room 201, Jonas Clark Hall. No prerequisites.
Full course, Module 5. Mr. deRivera.

191. HISTORY OF PSYCHOLOGY.

Historical development of theories and methods of psychology. Limited to 50. Also listed U.P. 191.
Full course, Modules 1-2. Mr. Kaplan.

192. CONCEPT OF SPACE IN PSYCHOLOGY.

Freshman Seminar: Psychology of spacial relations. This seminar is part of a cluster course called "Concepts of Space." An examination of the pervasiveness of spatial relations and spatial dimensions in the interpersonal and intrapersonal-intrapsychic functioning of humans. The course will deal with ontogenesis (child development), intrapersonal relations, the formation and dissolution of the body schema, psychopathology, etc. Limited to freshmen.
Full course, Modules 1-2. Mr. Kaplan.

200. LAB IN ETHOLOGY.

The observation of wild animals in the field. Prerequisite: Psychology 105. Permission of the instructor required. Limited to 10.
Full course, Module 5. Mr. Thompson.

201. LABORATORY IN SOCIAL PSYCHOLOGY.

Focuses on the behavior of small groups. Participation in this laboratory includes chairing one of the discussion groups in Psychology 184. Limited to 20. Prerequisites: Psychology 170, 105.
Full course, Modules 3-4. Mr. Laird.

202. LABORATORY IN CHILD RESEARCH.

An introduction to methods used in the study of child thought and behavior. Students will conduct research projects involving observational, experimental and interviewing techniques. Discussions will consider means of data analysis as well as data collection. Prerequisites: Psychology 105, 150. Permission of the instructor required.
Full course, Modules 1-2. Mr. Damon.

203. LABORATORY IN HUMAN COGNITION.

Experimental studies in the area of concept learning, memory, reasoning and language comprehension. The course is aimed at familiarizing the students with the methods used in cognitive psychology, the range of problems studied and the theoretical concepts used to interpret experiments. Skills in experimental design, statistical analysis, reading and summarizing scientific journal articles and scientific writing will be acquired in the context of conducting two or three closely supervised experimental projects and one more independent project. Prerequisite: Psychology 105.
Full course, Modules 1-2. Ms. Falmagne.

204. LABORATORY IN LEARNING.

The course is designed to familiarize students with research methods and experimental designs used in investigations of theories of learning and learning phenomena, with both human and animal subjects. Limited to 20. Prerequisites: Psychology 105, 130.
Full course, Modules 1-2. Mr. Stevens.

205. LABORATORY IN THINKING.

Empirical studies of selected problems in such areas as concept formation, problem solving and psycholinguistics. Related theoretical and methodological issues considered in their historical context. Permission of the instructor required. Prerequisite: Psychology 105.
Full course, Modules 1-2. Mr. Cirillo.

206. LABORATORY IN PERSONALITY.

Issues and problems in psychological research in general and in the personality area in particular are examined, the problems being exemplified in studies developed and performed by the class group and by individuals. Experiments may be in any of the conventional areas of personality research, such areas as perceptual defense, motives and performance, self perception, experimenter influence and emotions. Prerequisite: Psychology 172, 105. Permission of the instructor required.
Full course, Modules 1-2. Mr. Broverman.
Full course, Module 5. Mr. Laird.

207. LABORATORY IN PERCEPTION.

This is an intensive course stressing mastery of experimental skills and scientific writing. The course will involve five experiments and an independent project. Responsibilities will include written reports for the five experiments and a written report and in-class presentation of the independent project. There will be no examinations. A unique feature of the course is that each report may be resubmitted up to a total of three times, with only the highest grade counting. The experiments will include

investigation of sensory and perceptual phenomena in a variety of sense modalities, and will make use of the department's extensive collection of experimental apparatus, including the PDP-12 laboratory computer. Permission of the instructor required. Prerequisite: Psychology 105.
Full course, Modules 3-4. Mr. Whiteside.

208. LABORATORY IN CHILD PSYCHOLOGY.

Not offered, 1975-76.

Introduction to research methods employed in the study of child behavior through participation in studies carried out by the class, with particular emphasis on experimental designs currently used in the field. Related theoretical and methodological issues will be discussed with the aim of placing the experimental study of child behavior within the study of development. Permission of the instructor required. Prerequisites: Psychology 105, 150.
Ms. Uzgiris.

210. LABORATORY IN PHENOMENOLOGY.

This laboratory is designed to acquaint students with the method of "conceptual confrontation" — a type of phenomenology that is useful in exploring affects and interpersonal phenomena. Prerequisite: Psychology 184 or a philosophy course in phenomenology.
Full course, Module 2. Mr. deRivera.

211. FIELD OBSERVATION: COGNITIVE AND SOCIAL-INTERPERSONAL BEHAVIOR IN THE CLASSROOM SETTING.

Illustration of various cognitive and social-interpersonal models of human behavior in the classroom setting. Special consideration will be given to the work of Freud, Piaget, Skinner, Wertheimer, Lewis and F. Kluckhohn. Students will carry out field observations, and formulate and execute their own individual projects. Permission of the instructor required. Also listed: Education 211. Prerequisite: Psychology 105.
Full course, Modules 3-4. Mr. Zern.

213. LABORATORY IN INTERPERSONAL RELATIONS.

Interviewing in the area of interpersonal relations with emphasis on value possessions, value transmissions and value losses. Corequisite: Psychology 286. Limited to 20.
Full course, Modules 3-4. Ms. Dembo.

214. LABORATORY IN REHABILITATION.

Stress is placed on interview technique in the study of rehabilitation issues. Corequisite: Psychology 253. Limited to 20.
Full course, Modules 1-2. Ms. Dembo.

216. RESEARCH IN EARLY SOCIAL DEVELOPMENT.

Students will participate in an on-going research program focusing on the development of social and moral conceptions in young children. Weekly meetings will discuss study design, data analysis and methods of data collection. Students will read and discuss relevant socialization literature, and will participate in the construction and execution of research projects. Permission of the instructor required.
Full course, Module 1-2.
Full course, Modules 3-4. Mr. Damon.

217. RESEARCH ON DEVELOPMENT IN EARLY CHILDHOOD.

With roots in Piaget's theorizing, a constructivist-interactionist approach to the study of development in infancy and early childhood will be exemplified through the findings and problems from an on-going research project. Students will formulate pertinent studies, participate in their execution and prepare papers describing their work. Permission of the instructor required.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Uzgiris.

218. RESEARCH IN ANIMAL BEHAVIOR.

Weekly meetings in which research literature of interest to the group is reviewed, and participants' research projects are designed and evaluated. Permission of the instructor is required.
Variable credit.
Modules 1-2. Mr. Stevens, Mr. Thompson.

219. RESEARCH IN BRAIN DAMAGE AND BEHAVIOR.

Not offered, 1975-76.

Intensive investigation of the mechanisms underlying recovery of functions after traumatic injury to the central nervous system. Students will be required to participate in all phases of the research including selection of the problem, surgical procedure, behavior evaluation and subsequent data analyses. It is expected that a paper suitable for presentation at a scientific meeting or publication will result. Students involved will be expected to share responsibility for the presentation and/or publication. Permission of the instructor required.

Mr. Stein.

220. RESEARCH IN LEARNING.

Students will participate in the design, conduct and interpretation of experimental research on problems in animal discrimination learning. Permission of the instructor required.
Variable credit.
Modules 3-4. Mr. Stevens.

226. RESEARCH IN PERCEPTUAL DEVELOPMENT.

This course involves collaboration between the instructor and students on individual research projects in perceptual development. For purposes of the course, the study of perception may include the study of sensory processes, psychophysics, the relation between perception and physical action, the relation between perception and cognition and the aesthetics of perception. Students may

choose to study any of those areas from a developmental perspective. In the past, students have undertaken projects on: 1) the age-related development of peripheral visual acuity and its relation to visual scanning strategies, 2) the development of musical cognition and perception including a structural analysis of children's songs and a study of the relation between the formal properties of intelligence and the development of music appreciation, 3) the development of patterns of head-movement activity accompanying auditory localization and 4) the relation between eye movements and perception of part-whole figures (e.g., beasts made of fruit). Experience has shown that the course demands considerable investment of time and that its aims are unlikely to be fulfilled in a two-module sequence. Thus, students should plan to register for at least three and preferably four modules. Course requirements include attendance at a weekly research seminar. Permission of the instructor required.
Full course, Modules 1-2.
Full course, Modules 3-4.
Full course, Module 5. Mr. Whiteside.

228. RESEARCH FROM THE ORGANISMIC-DEVELOPMENTAL PERSPECTIVE.

Theory, findings and research problems deriving from an on-going research program — an organismic-developmental systems approach to the analysis of perceptual and other cognitive processes — will be discussed. Empirical studies on problems relevant to the research program will be formulated and conducted by individual students. Papers describing the research project will be prepared. Prerequisite: Psychology 105. Permission of the instructor required.
Full course, Modules 1-2.
Full course, Modules 3-4.
Full course, Module 5. Mr. Wapner.

230. THE PHYSIOLOGY OF BEHAVIOR.

A survey of current problems of physiological psychology including theories of brain function. Emphasis will be placed on the underlying physiological mechanisms which mediate human behavior, i.e., motivation, emotion, learning, perception and memory. The course is constructed on a systems approach, designed to demonstrate the complex and interdependent relationship of the body and brain to behavior.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Stein.

231. COGNITIVE DEVELOPMENT.

The course critically surveys empirical findings and selected theoretical viewpoints (especially Piaget's) in the areas of perceptual development, development of scientific concepts, of logic and of language. The relations between cognitive development and, respectively, language and culture, are examined and discussed in connection with the theories surveyed. Active participation from students is encouraged. Permission of the instructor required.
Full course, Modules 1-2. Ms. Falmagne.

240. DEVELOPMENTAL APPROACHES TO BEHAVIOR.

A critical examination of presuppositions, methods, concepts and empirical inquiries of those concerned with the development of behavioral systems. Implications of developmental conceptualization for all of the life sciences will be discussed. Psychological theories of Freud, Piaget and Werner will be given special emphasis. Permission of the instructor required. Also listed U.P. 240.
Full course, Modules 1-2. Mr. Kaplan.

241. SEMINAR IN INDIVIDUAL DIFFERENCES IN COGNITIVE FUNCTIONING.

An examination of the evidence for and explanation of individual differences in cognitive functioning and personality. Particular attention is given to the role of socio-cultural factors in cognitive functioning. Permission of the instructor required.
Full course, Modules 3-4. Ms. Uzgiris.

245. CONCEPTS IN LEARNING THEORY.

Some persistent problems in the field of learning are examined. Examples of such problems are the question of the universality of laws of learning, differentiating between non-associate (motivational) and associative factors and species differences. Psychology 130 provides desirable preparation for this course.
Full course, Module 5. Mr. Stevens.

246. PRINCIPLES OF BEHAVIORAL EVOLUTION.

From a broad survey of the social systems of animals, this course will attempt to distill the general principles that have directed the evolution of animal behavior. Also listed Biology 246.
Full course, Modules 3-4. Mr. Thompson.

247. SOCIAL DEVELOPMENT FROM INFANCY THROUGH ADOLESCENCE.

An examination of theories and research dealing with the process of socialization in the first two decades of life. Topics to be emphasized include: attachment, imitation, role taking and the development of social identity.
Full course, Module 5. Mr. Damon.

248. CONCEPTS IN THEORIES OF PERSONALITY — NORMAL AND ABNORMAL.

Consideration and a critical analysis of: 1) concepts and issues in theories of personality, and 2) concepts used to account for deviant behavior. Prerequisite: Psychology 172, 173.
Full course, Modules 1-2. Mr. Wiener.

249. PSYCHOLOGY OF DEATH.

Beliefs and actions regarding death in diverse social contexts and cultures. Permission of the instructor required.
Full course, Modules 1-2. Mr. Bibace.

250. COMMUNICATION: VERBAL AND NONVERBAL.

1) An analysis of the term communication and 2) a study of the varieties of communication patterns for different populations.
Full course, Modules 3-4. Mr. Wiener.

251. CURRENT CONCEPTS IN MENTAL HEALTH: THEORY AND PRACTICUM.

Students will participate in mental hospitals, mental retardation centers or other agencies. This practicum experience will be integrated through the use of theoretical concepts articulated in the academic prerequisites to this course. A diary of the practicum experiences and a paper will be required. Prerequisites: Psychology 101, 162, 172, 173. Permission of the instructor required.
Full course, Module 5. Mr. Bibace.

253. SEMINAR IN REHABILITATION.

Psychological problems in everyday life situations, such as problems of the physically disabled, mentally retarded, the aged, the poor, etc. will serve as topics. The primary focus is on interpersonal relations and their importance for environmental changes. Limited to 20. Corequisite: Psychology 214.
Full course, Modules 1-2. Ms. Dembo.

255. PSYCHOLOGY OF MUSIC. *Not offered, 1975-76.*

An examination of the physics of musical sound, the structure and function of the auditory system, the history of music with special reference to the evolution of scales and the development of musical tastes, historically and ontogenetically. Limited to 15.
Mr. Whiteside.

260. THE HISTORY AND PRESENT STATUS OF INSTINCT.

It has long been argued and long contested that man and animal alike are guided in their social behavior by innate tendencies. This offering will emphasize the devious and irrational course of progress in a scientific field of study so loaded with social and philosophical implications. Permission of the instructor required.
Full course, Modules 1-2. Mr. Thompson.

261. HUMAN NEUROPSYCHOLOGY.

Beginning with the neurological basis of behavior and neurobehavioral abnormalities, the field of cortical function is surveyed from the clinical, theoretical and experimental viewpoints. Topics covered include aphasia, cerebral dominance, memory and its disorders, organic disorders of perception and emotion; methods used in clinical and experimental study.
Full course, Modules 1-2.
Full course, Modules 3-4. Ms. Kaplan, Ms. Oscar-Berman,
Mr. Benson, Mr. Butters,
Mr. Cermak, Mr. Goodglass,
Mr. Howes, Mr. Rosen,
Mr. Zurif.

262. INFORMATION PROCESSING — MEMORY AND PERCEPTION.

Models of normal information processing and their application to neurologically impaired perceptual and mnemonic processes will be reviewed. An attempt will be made to show how different neurological disorders represent failures at distinctive stages of information processing. Clinical materials related to visual object agnosia, constructional apraxia and various amnesic states will be presented and discussed in detail. Emphasis will be placed upon a critical examination of the theoretical and experimental investigations of Luris, Teuber, Talland and Milner.
Full course, Modules 1-2. Ms. Oscar-Berman,
Mr. Butters, Mr. Cermak.

263. CLINICAL SEMINAR — LANGUAGE DISORDERS.
Not offered, 1975-76.

A patient with aphasia will be studied in depth each week on the basis of neurological and behavioral background data and testing to be assigned in rotation to each qualified member of the class with supervision by the instructor. Class session will include interview with patient and integrated interpretation of data from all sources.
Mr. Goodglass, Ms. Kaplan.

264. CLINICAL SEMINAR—NON-LANGUAGE DISORDERS. *Not offered, 1975-76.*

A patient with neurobehavioral disorders other than aphasia will be studied in depth each week on the basis of neurological and behavioral background data, plus testing to be assigned in rotation to each qualified member of the class with supervision by the instructor. Cases studied will include disorders of memory, perception, visuospatial ability, body image. Class session will include interview with patient and integrated interpretation of data from all sources. Limited to 12. Permission of the instructors required.
Mr. Goodglass, Ms. Kaplan.

265. INFORMATION PROCESSING—LANGUAGE.
Not offered, 1975-76.

The phenomena of aphasia, alexia and associated disorders of language will be considered in relation to theories of the storage and processing of verbal information. Relevant models dealing with phonology, word selection, syntax and semantics will be discussed. Attention will be given to the special problems of using psychological theories based on experimental data from normal subjects to account for findings with brain-damaged patients.
Mr. Howes, Mr. Zurif.

266. CEREBRAL DOMINANCE SEMINAR.
Not offered, 1975-76.

The distinctive roles of the left and right hemispheres in man will be reviewed, first by examining alterations in language and nonverbal behavior under conditions of

unilateral brain damage and section of the corpus collosum. A second approach will involve the examination of techniques used to investigate hemispherical functional asymmetry in the normally intact brain. Special attention will be devoted to hemispheric asymmetry in relation to different levels of language processing.
Mr. Goodglass, Mr. Zurif.

270. SEMINAR—ADVANCED TOPICS IN SOCIAL PSYCHOLOGY.

Intensive treatment of selected areas in social psychological research and theory, including consistency theories in attitude formation and in interpersonal perception; attribution theory in self-perception; social/situational determinants of normal, everyday behavior and of anti-social behaviors such as violence, criminality and riots. Permission of the instructor required. Ordinarily limited to senior majors in Psychology or Sociology.
Full course, Modules 3-4. Mr. Laird.

273. SEMINAR IN PERCEPTUAL AND AESTHETIC DEVELOPMENT. *Not offered, 1975-76.*

In this course the approaches to perceptual development taken by Helmholtz, Hebb, Piaget and certain contemporary Soviet psychologists are studied and an attempt is made to see how each might be extended to provide a theoretical framework with which to study age-related changes in artistic taste and aesthetic appreciation.
Mr. Whiteside.

275. ROLE TAKING AND MORAL JUDGMENT.

Not offered, 1975-76.

Theoretical conceptualizations of the phenomenon of role taking will be critically evaluated. The relation of perspectivism to progressive cognitive change will be discussed. Moral judgment will be viewed as one type of role taking process. Permission of the instructor required.
Mr. Damon.

276. SYMBOLISM IN EVERYDAY LIFE: LANGUAGE, DREAMS, MYTHS, LITERATURE AND SCIENCE.

A critical examination of various theories of symbol-formation with special emphasis on the origins, structure and functions of dreams and myths. The relation of dream formation to psychopathology and the recent work on the physiological bases of dreaming will also be discussed. Permission of the instructor required. Also listed U.P. 276.
Full course, Module 4. Mr. Kaplan.

279. COMPUTER APPLICATIONS IN PSYCHOLOGY.

Most computer courses deal with the computer's ability to analyze large quantities of data. This course will stress the use of computers in on-line applications such as acquiring data and running experiments. Students will learn the machine and assembly languages used by the department's PDP-12 laboratory computer. The major course responsibility will involve writing a substantial program that would make possible the completion of a research project (in the student's area of interest) that would be difficult or impossible to undertake without the use of a computer. No previous background in computer languages is assumed. The course is not recommended for those who have taken Computer Science 140.
Prerequisite: Psychology 105.
Full course, Module 5. Mr. Whiteside.

280. CURRENT PROBLEMS IN CHILD PSYCHOLOGY.

Not offered, 1975-76.

Specific aspects of child behavior will be studied through analysis of the current research literature in the field. Familiarization with current concerns of the field, the historical roots of these concerns, as well as with various literature sources will be the aim of the seminar. Permission of the instructor required.
Ms. Uzgiris.

285. FUNCTIONS OF THE DIFFERENT EMOTIONS.

Following the rules of "Conceptual Confrontation" we will attempt to explicate a different function for each emotion in a way that systematically relates the emotions named in the English language. Permission of the instructor required.
Full course, Modules 3-4. Mr. deRivera.

286. SEMINAR IN INTERPERSONAL RELATIONS.

Value problems pertaining to interpersonal relations will be discussed, including value possessions, value losses, regaining of values and adjustment to value losses. Limited to 20. Corequisite: Psychology 213. Prerequisite: Psychology 253.
Full course, Modules 3-4. Ms. Dembo.

296. DIRECTED RESEARCH IN PSYCHOLOGY.

Independent study for qualified students not in the honors program. Prerequisite: approval of department chairperson.
Variable credit.
Modules 1-2-3-4-5. Staff.

297. DIRECTED READINGS IN PSYCHOLOGY.

Independent study for qualified students not in the honors program. Prerequisite: approval of department chairperson.
Variable credit.
Modules 1-2-3-4-5. Staff.

299. HONORS IN PSYCHOLOGY: SENIOR YEAR.

Students will carry out a research project under the direction of a member of the staff.
Variable credit.
Modules 1-2-3-4-5. Staff.

300. PRO-SEMINAR DEVELOPMENT PSYCHOLOGY.
Not offered, 1975-76.

A seminar devoted to the presentation and critique of different developmental approaches to the individual and his ways of functioning in the world. Among the approaches considered are 1) learning theory as well as information processing, 2) Piagetian, 3) organismic-developmental and 4) Freudian and neo-Freudian. The aim of the seminar is to acquaint the participants with sympathetic expositions of diverse points of view and the application of these viewpoints to empirical inquiry. It will thus provide a basis for subsequent discussions in other seminars of the various ways of dealing with substantive issues (e.g., learning, moral action and moral judgment, language behavior, the processes of thinking). Several faculty members and advanced graduate students will participate in conducting the seminar, each module of which will be devoted to the examination of one theoretical approach.
Variable credit.
Ms. Falmagne, Ms. Uzgiris,
Mr. Bibace, Mr. Damon, Mr. Kaplan,
Mr. Wapner, Mr. Whiteside.

301. PROBLEM, THEORY AND METHOD IN PSYCHOLOGY.

During Module 1, the faculty will present their own research with an emphasis on the special features of methodology they employ, including the links between method, theory, problems and findings. During Modules 2, 3 and 4, there will be informal ad hoc individual or group meetings in which students will present proposals for their M.A. theses. At the end of Module 4, students will submit written reports which cover the status of the students' research.
Variable credit.
Modules, 1-2, 3-4. Mr. Wapner.

302. STATISTICAL METHODS.

Descriptive statistics, statistical inference and experimental design in psychology.
Variable credit.
Modules 1-2, 3-4. Mr. Schmuller.

303. BASIC PSYCHOLOGICAL PROCESSES IN PSYCHOPHYSICS, PERCEPTION, LEARNING AND MEMORY.

An introduction to psychophysics, sensory processes, theories of perception and theories of learning (Modules 1-2); memory, language, information processing, higher mental processes, including the biological bases thereof (Modules 3-4). This seminar is designed to give students basic concepts in classical and contemporary psychology. Several faculty members will conduct the class.
Modules 1-2. Mr. Stevens, Mr. Wapner,
Mr. Whiteside, Mr. Wiener.
Modules 3-4. Ms. Falmagne, Mr. Cirillo, Mr. Schmuller.

305. BASIC PSYCHOLOGICAL PROCESSES IN SOCIAL-PERSONALITY.

An examination of important processes in social-personality psychology. Topics include processes in motivation, attribution and evaluation, group formation and development, in the interaction between individual dynamics and cultural institutions.
Modules 1-2. Mr. deRivera, Mr. Laird, others.

308. RESEARCH PROBLEMS IN PHYSIOLOGICAL PSYCHOLOGY. *Not offered, 1975-76.*

An advanced course in research methodology including surgical and stereotaxic techniques, histology, EEG recording and analysis and general methods for animal care. Permission of the instructor required.
Mr. Stein.

311 (a). CLINICAL METHODS I.

Introduction to psychometric and projective assessment.
Variable credit.
Modules 1-2. Ms. Kellett, Mr. Vogel.

311 (b). CLINICAL METHODS I.

Interpretation of data from psychometric and projective test data from a developmental perspective.
Variable credit.
Module 3. Mr. Cirillo.

311 (c). CLINICAL METHODS I.

Clinical seminar in neuropsychological assessment.
Modules 4-5. Ms. Kaplan, Mr. Goodglass.

312. PSYCHOPATHOLOGY.

Introduction to psychopathology: directly through naturalistic observation and interviews with seriously disturbed individuals; indirectly through clinical and experimental reports related to description and explanation in psychopathology. A paper on some specific psychopathological phenomenon (e.g., delusions, hallucinations) will be required.
Variable credit.
Modules 3-4. Mr. Bibace.

313. PRINCIPLES AND CONCEPTS UNDERLYING PSYCHOLOGICAL TESTS. *Not offered, 1975-76.*

Theory and problems of psychological measurement with special reference to psychological tests.
Mr. Laird.

315. ADVANCED CHILD PSYCHOLOGY.
Not offered, 1975-76.

Discussion of conceptions and current research pertaining to some questions in the general area of human development in the early childhood years, such as imitation-identification, exploration and play, temporal organization of actions, etc.
Variable credit. Ms. Uzgiris.

317. BEHAVIOR IN INFANCY.

The seminar will proceed from an examination of the capacities for functioning in the neonate to a consideration of the changes in those capacities during ontogenesis with a view toward understanding the infant's organization of his functioning in the world.
Modules 3-4. Ms. Uzgiris.

319. ADVANCED SEMINAR ON ORGANISMIC-DEVELOPMENTAL APPROACHES TO BEHAVIOR.

Basic categories of the organismic-developmental approach to life sciences, with examination of the application of these categories to a wide range of problem areas in psychology.
Variable credit.
Module 4. Mr. Kaplan.

320. ADVANCED SEMINAR IN GENETIC-STRUCTURAL THEORIES.

In this seminar, the major categories of all genetic-structural developmental theories (Freud, Werner, Piaget, et al) and the concepts and methodologies specific to different theories will be thoroughly examined and critically analyzed. This is an ongoing seminar comprised of advanced graduate students and including interested faculty. The seminar deals with the systematic roles of such concepts as "development", "structure", "regression", "system", "stage", etc.
Modules 1-2. Mr. Kaplan.

322. PSYCHOLOGY OF LEARNING.

Not offered, 1975-76.

Theoretical viewpoints and experiments in the field of learning.
Variable credit.
Modules 1-2. Mr. Stevens.

324. THEORIES OF PERSONALITY I: ISSUES IN THE PHILOSOPHY OF PSYCHOLOGY.

This course covers three areas: 1) discussion of the philosophical bases of "theories" of personality; 2) consideration of some of these issues in different theories (e.g., Freud, Kelly, Dollard and Miller); and 3) presentation and discussion of an alternative framework.
Variable credit.
Modules 1-2. Mr. Wiener.

325. THEORIES OF PERSONALITY II: EXPLORATION OF EXEMPLAR THEORIES OF PERSONALITY.

Not offered, 1975-76.

Mr. Wiener.

326. SELECTED PROBLEMS IN SOCIAL PSYCHOLOGY.

Not offered, 1975-76.

An advanced course in social psychology, in which concern is equally divided between theory and research methodology. Students will become acquainted with the literature relevant to a number of problems in the area, become proficient in the necessary techniques and exercise these competencies by frequent conduct of appropriate empirical investigations. Permission of the instructor required.

Mr. Laird.

327. MORAL DEVELOPMENT.

Classical and contemporary approaches to the development of moral judgment and conduct in the individual. Emphasis will be on new and future directions for research in this area.
Full course, Modules 1-2. Mr. Damon.

329. INTRODUCTION TO INTERVIEWING.

Variable credit.
Module 1. Mr. Bibace.

330. GRADUATE SEMINAR ON TEACHING OF GENERAL PSYCHOLOGY. *Not offered, 1975-76.*

Graduate students who will participate as teaching assistants in General Psychology, will work on the formulation of all features of the course including assignments, responsibilities for lectures, readings, demonstrations, etc.

Mr. Wapner.

331. CLINICAL METHODS II.

Practicum devoted to clinical experiences primarily with children. This includes intelligence and projective testing; diagnostic interviewing and play therapy with children. Students are supervised by Dr. Ciottone and other members of the Providence Child Guidance Clinic staff. Supervision either through graduate students or through direct observations and tape recordings. On alternate weeks, there is an evening meeting with Dr. Ciottone devoted to conceptualizing questions raised through the clinical activities. Students currently spend one day per week at the Child Guidance Center.
Variable credit.
Modules 1-2-3-4. Mr. Ciottone.

332. THEORIES OF PSYCHOTHERAPY.

Comparison of various theoretical approaches to psychotherapy.
Variable credit.
Modules 3-4. Mr. Wiener.

334. SEMINAR IN BEHAVIOR AND EVOLUTION.

A consideration of selected contemporary issues in the phylogeny and ontogeny of behavior in general and social behavior in particular.
Variable credit.
Modules 3-4. Mr. Thompson.

337. SEMINAR ON REASONING. *Not offered, 1975-76.*

The central theme is an examination of the notion of logical competence and its alternatives, both from a definitional point of view and in connection with the experimental data on reasoning. Starting from a review of the current literature on reasoning, the seminar will then explore the reciprocal relationships between logic and imagery, and logic and language. Various conceptions of logical competence will be discussed and related to the analogous issues in the psycholinguistics field.

Ms. Falmagne.

338. CONCEPTIONS OF PERSON.

Not offered, 1975-76.

Examination of research and theory in the areas of self concept and of person perception with a focus on relationship between the two.

Mr. Laird.

339. SEMINAR ON THE EFFECTS OF EARLY EXPERIENCE.

An examination of recent evidence pertaining to the effects of various circumstances during early ontogenesis on the course of cognitive and motivation development aimed at conceptualizing these effects within a coherent framework.

Modules 1-2. Ms. Uzgiris.

340. PHENOMENOLOGY OF INTERPERSONAL RELATIONS.

Not offered, 1975-76.

Interpersonal phenomenon will be systematically examined with the methodology of "conceptual confrontation."

Mr. deRivera.

342. CHEMICAL COMMUNICATION.

A seminar dealing with the role of pheromones in mammalian behavior.

Variable credit.

Modules 3-4. Mr. Stevens.

348. SOCIAL PSYCHOLOGICAL PERSPECTIVES ON PROBLEMS OF ADJUSTMENT.

Not offered, 1975-76.

Examination of "deviant" behavior as a socially defined phenomenon, including attention to the process of attitude and belief formation and change; attribution of characteristics to the self and others; "cognitive" influences on motivation and emotions; socialization of children and adults; and the role of the deviant in society. Consideration of implications of these topics for behavioral change.

Mr. Laird.

351 (a). CLINICAL METHODS III.

Cognitive approaches to children with learning disabilities.

Variable credit.

Modules 1,2,3,4. Ms. Walsh, Mr. Hurwitz.

351 (b). CLINICAL METHODS III.

Practica in consultation. Currently, graduate students can enroll in one or more of three practica devoted to consultation: consultation with nursing clinicians and team leaders at Hahnemann Hospital; consultation with residents in family medicine; and consultation with public school teachers of children coming to Clark for their learning disabilities.

Modules 1, 2, 3, 4. Mr. Bibace.

352. CLINICAL METHODS IV.

Supervised experience in diagnostic interviewing in the Psychological Services Center.

Variable credit.

Modules 1-2, 3-4. Mr. Baker, Mr. Cirillo.

353. THEORY AND PRACTICUM IN BEHAVIOR MODIFICATION.

Variable credit.

Modules 1-2-3-4. Mr. Peterson.

357. SYMBOLIC BEHAVIOR.

A seminar focusing on the problem of representation of symbolization, with special attention to the representation of abstract or "intangible" conceptions (meanings) in concrete objects, events, patterns, etc. The seminar will concern itself with the developmental process by which individuals represent meanings in dreams, political cartoons, spatial arrangements, material structures and finally linguistic forms. Emphasis throughout will be on research into symbolic representation.

Modules 3-4. Mr. Kaplan.

360. SEMINAR: CURRENT APPROACH TO THINKING I.

Not offered, 1975-76.

The seminar is aimed at providing an introduction to a number of contemporary, increasingly influential approaches to thinking, in particular: 1) computer simulation of problem-solving, memory, language comprehension; 2) recent Soviet work on thought and inner speech; 3) psychological and linguistic approaches to reasoning and semantics. The format will be study, presentation and discussion of selected significant writings in their areas. An additional "directed readings" arrangement could also be worked out optionally. The attribution of these topics to Part I of the Seminar (360) or to Part II (361) will be done at an early organizational meeting in September, according to the interests of students wishing to participate in 360, 361, or both (participation in both seminars is encouraged, but not required).

Variable credit. Ms. Falmagne.

361. SEMINAR: CURRENT APPROACH TO THINKING II.

Not offered, 1975-76.

Refer to description under Psychology 360.

Variable credit. Ms. Falmagne.

380. RESEARCH IN PSYCHOLOGY.

Direction of individual students in their research.
Variable credit.
Modules 1-2-3-4. Staff.

381. READINGS IN PSYCHOLOGY.

Critical analysis of literature in areas related to individual research.
Variable credit.
Modules 1-2-3-4. Staff.

385. PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER I.

Variable credit. Mr. Baker, Clinical Staff:
Modules 1-2, 3-4. Mr. Bibace, Mr. Cirillo, Mr. Wiener.

386. PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER II.

Variable credit. Mr. Baker, Clinical Staff:
Modules 1-2, 3-4. Mr. Bibace, Mr. Cirillo, Mr. Wiener.

387. PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER III.

Variable credit. Mr. Baker, Clinical Staff:
Modules 1-2, 3-4. Mr. Bibace, Mr. Cirillo, Mr. Wiener.

388. PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER IV.

Variable credit. Mr. Baker, Clinical Staff:
Modules 1-2, 3-4. Mr. Bibace, Mr. Cirillo, Mr. Wiener.

389. INTERNSHIP IN PSYCHOLOGY.

Variable credit.
Modules 1-2, 3-4. Staff.

Russian

(See Department of Foreign Languages and Literatures.)

Science, Technology and Society

PROGRAM COMMITTEE

Robert W. Kates, Ph.D., University Professor (Geography)
John T. Reynolds, Ph.D., Professor of Microbiology
Michael McClintock, Ph.D., Visiting Professor of Physics
Harry M. Schwartz, B.C.E., Visiting Professor of Environmental Affairs, Adjunct in Geography
Harvey Gould, Ph.D., Associate Professor of Physics
Christoph Hohenemser, Ph.D., Associate Professor of Physics, Chairman
Roger E. Kasperson, Ph.D., Associate Professor of Government and Geography
Frank W. Puffer, Ph.D., Associate Professor of Economics
Alan A. Jones, Ph.D., Assistant Professor of Chemistry
Samuel E. Johnson, Ph.D., Assistant Professor of Zoology
Stanley J. Poreda, Jr., Ph.D., Assistant Professor of Mathematics

UNDERGRADUATE PROGRAM

Science, Technology and Society (STS) is a program of interdisciplinary study with emphasis on the assessment of science and technology in a social and political context. The goal of the program is to train individuals who are able to deal with policy questions on the use and misuse of science and technology, and who do so with the short and long range limitations of the natural environment in mind.

Although science and social science are both important to the goals of the program, major requirements in the program do not give equal weight to both, but emphasize achieving literacy in science. At the same time, majors in other fields who find STS courses useful are most welcome, and often constitute the majority of students enrolled in a given course.

The reason for the emphasis on science training for those who major in Science, Technology and Society is twofold: 1) many significant problems are accessible only with a thorough grounding in science; 2) in the nation's future, there is a significant need for managers of technology whose experience with science and technology is more than perfunctory.

A major in STS should be of interest to students with significant talent for science whose goal is to understand the important issues at the complex interface between science and society. Some graduates of the program may define themselves in terms of the rapidly emerging new field of technology assessment. Others may enter broadly defined graduate areas such as resource management, geography, oceanography or environmental science. The program should also be of interest to pre-medical and pre-law students, in particular those interested in environmental law, potential school teachers, community service workers, government regulatory officials and science writers.

The requirements for the major in Science, Technology and Society are as follows —

1) Ten semesters of basic natural science, with at least six semesters in a single discipline. For the present purpose, the natural sciences shall include physics, chemistry, biology and mathematics.

2) Four semesters of courses in social science selected with advice of the Program Committee to fulfill the goals of the student in keeping with the program.

3) Three semesters of problem-oriented courses on specific issues from the listing below. In general, the

problem-oriented courses will be offered under the specific auspices of the Program Committee, will provide a distinctly multidisciplinary approach, will have a significant, if not predominant, science input and will in most cases be offered jointly by two or more faculty.

The choice of specific courses to meet the science and social science requirements will be made with approval of the Program Committee. Students should present their plans of study in the form of a written proposal to the chairman of the Program Committee after discussions with individual members of the committee, particularly those who are affiliated with departments in which the student wishes to specialize.

Students wishing to examine sample programs with emphasis in each of several disciplines of science should request the brochure on that subject from the chairman of the Program Committee.

Students who intend to do graduate work are encouraged to investigate the minimum major requirements of the basic scientific discipline in which they plan to concentrate, and may wish to fulfill these requirements along with the requirements of the program.

Students who wish to receive Honors in Science, Technology and Society must pass a comprehensive examination in their senior year at the B+ level, and must present an acceptable undergraduate thesis. The comprehensive examination will cover: 1) basic science in a discipline of the candidates's choice; 2) basic social science in the discipline of the candidate's choice and 3) a major problem of Science, Technology and Society of the candidate's choice.

The following courses satisfy the requirements of problem-oriented courses. The courses have no specific prerequisites except as indicated.

COURSES

101. INTRODUCTORY CASE STUDIES.

A joint introductory course to the Program on Science, Technology and Society and the Program on Environmental Affairs. The course will introduce students to a holistic approach to problem solving in environmental affairs and technology assessment. For Modules 1 and 2, case studies will include: a) population, food and development; b) energy policy for Clark University and c) water resource planning. For Modules 3 and 4, cases will include: a) solar and nuclear energy; b) assessing technological risk and environmental impact and c) urban transportation and the automobile. The course may be taken for two or four modules, and may be entered in Module 1 and 3.
Full course, Modules 1-2. Mr. Berry, Mr. Hohenemser, Mr. McClintock, Mr. Reynolds, Mr. Schwarz.
Full course, Modules 3-4. Mr. Hohenemser, Mr. Jones, Mr. Kates, Mr. McClintock, Mr. Schwarz.

121. ENERGY SELF-SUFFICIENT HABITATS.

Not offered, 1975-76.

This seminar will investigate the feasibility of using freely available sources of energy, such as solar aeolian or that derivable from wastes, to provide the energy for necessary functions in the home. We will investigate what is known about the use of sun, wind and waste to provide energy for human habitats, but we will also give similarly close attention to the feeling of peace and the regenerative capacity that must be obtainable in a successful habitat. Demonstration experiments will be conducted by students in the seminar to provide data on the feasibility of certain physical features of a habitat, and preliminary designs of prototypical habitats will be developed for future study. The seminar will be limited in enrollment to 20 students of either upper division or graduate standing.
Full course, Modules 1-2. Mr. Krueger, Mr. McClintock.

142. ENVIRONMENTAL CHEMISTRY.

A study of the chemistry of the problems of the environment. Topics covered are chemistry of air and water pollution and possible solutions. Topics of interest include pollution from fossil fuels, oil pollution, pesticides, metal contamination, food additives, solid wastes. The laboratory primarily will make use of analytical techniques. Prerequisites: Chemistry 130 or 132. Three lectures and one laboratory per week.
Full course, Modules 1-2. Mr. Jones.

150. AQUARIUS: PLANNING FOR URBAN WATER RESOURCES.

Refer to course description under Geography 150.
Staff.

161. POPULATION, RESOURCES AND HEALTH.

Not offered, 1975-76.

An assessment of critical problems relating to the growth of human population. Topics to be discussed include the biology of population growth, the current description of human population, the resource base for human populations and health problems related to high density of population and technology. There are no specific prerequisites, but students should have some background in biology, chemistry or physics.
Full course, Modules 1-2. Mr. Hohenemser, Mr. Reynolds.

201. ENERGY AND SOCIETY.

The course examines the ways in which energy is provided in an industrial society such as that of the United States. The use and remaining reserves of fossil fuels are studied, e.g., coal and petroleum, as well as those methods planned for the future, e.g., various nuclear methods. Special attention is given to alternative forms of energy production, such as solar, wind, fusion and use of the temperature differences in ocean currents. The environmental impacts of the various energy sources are examined, and a rationale is developed for choosing among the alternatives. Changes in lifestyle caused by modification of energy demand are also explored.
Full course, Modules 3-4.
Mr. McClintock, invited guest lecturers.

211. WATER REUSE AND THE AMERICAN CITY.

Refer to course description under Geography 211.
Mr. Kasperson, Mr. Reynolds, Mr. Schwarz.

212. SCIENCE AND THE CITIZEN: CASE STUDIES IN TECHNOLOGY ASSESSMENT.

A number of cases in which scientists intervened in the political process in their role as citizens will be examined. The scientist's influence both as sponsor and dissenter will be examined. One case will be selected for more detailed analysis including oral and written debate in which students take opposing roles. The course is open to upper division students with some background in physical and social sciences. Permission of instructors is required.
Full course, Modules 3-4. Mr. McClintock, Mr. Schwarz.

221. THE DYNAMICS OF SYSTEMS.

A course designed to provide the student with an understanding of the contributions that computer simulation models can make in the formulation and assessment of alternative social, economic and technological policies. Lectures and assignments will be based on models drawn from actual problems including limits to growth, determinants of long-term resource availability, epidemiology and industrial dynamics. Students will construct, operate and analyze their own models of social systems. The course does not require previous experience with computer systems nor special competence in mathematics, but familiarity with calculus is desirable.
Full course, Modules 3-4. Mr. Gould, Mr. Gottlieb, Mr. Johnson.

239. BIOLOGICAL SYSTEMS AND WATER POLLUTION CONTROL.

Refer to course description under Biology 239.
Mr. Reynolds.

240. SOLAR ENERGY THERMAL PROCESSES.

A mathematical approach to the understanding of the technical and economic aspects of solar energy to supply heat with special emphasis on the New England climate. Topics to be treated are extraterrestrial solar radiation, solar radiation at Earth's surface, measurements, data and estimation of solar radiation, selected topics in heat transfer, radiation characteristics of opaque materials, transmission of radiation through partially transparent media, flat plate collectors, energy storage, solar process models, solar water heating and solar space heating. Study of these topics will be directed toward the use and understanding of TRNSYS, a computer simulation of solar thermal systems developed originally at the University of Wisconsin Solar Energy Laboratory. A knowledge of mathematics through elementary differential equations will be assumed. Facility in computer programming will be helpful but not required.
Full course, Modules 1-2. Mr. McClintock.

263. THE FUTURE: WAYS OF KNOWING AND SURVIVAL.

Refer to course description under Geography 263.
Full course, Modules 1-2. Mr. Kates, Mr. Von Laue.

270. SPECIAL TOPICS IN SCIENCE, TECHNOLOGY AND SOCIETY.

Independent readings and/or experimental work.
Variable credit.
Modules 1-2-3-4. Staff.

271. HONORS IN SCIENCE, TECHNOLOGY AND SOCIETY.

Supervised research leading to an undergraduate thesis.
Variable credit.
Modules 1-2-3-4. Staff.

272. SPECIAL PROBLEMS IN ALTERNATIVE SOURCES OF ENERGY.

For Modules 1-2, a full course research seminar in methane generation from organic waste will be offered in connection with the tri-college research project on that topic. This course is also offered as an interdisciplinary research seminar, Center for Experimental Studies, College of the Holy Cross.
Variable credit.
Modules 1-2. Mr. McClintock.

278. NUCLEAR ENERGY POLITICS.

Refer to course description under Government 278.
Full course, Modules 1-2. Mr. Kasperson.

292. NUCLEAR WEAPONS POLITICS.

Refer to course description under Government 292.
Full course, Modules 3-4. Mr. Marwah.

Sociology

DEPARTMENT FACULTY

Robert J. S. Ross, Ph.D., Assistant Professor of Sociology, Department Chairman
Edward E. Sampson, Ph.D., Professor of Sociology, Adjunct Professor of Psychology
Rona M. Fields, Ph.D., Associate Professor of Sociology
Stanford N. Gerber, Ph.D., Associate Professor of Social Anthropology and Sociology
Sidney M. Peck, Ph.D., Associate Professor of Sociology
Archie Smith, Jr., Rev., Ph.D., Assistant Professor of Sociology. On Leave of Absence, 1975-76.

UNDERGRADUATE PROGRAM

The goals of the Sociology Department are to enable persons to obtain a *working knowledge* of the theories, concepts, methods and findings of sociology.

The program is conceptual and academic in that emphasis is placed upon students obtaining a thorough grasp of theoretical and methodological aspects of the discipline.

The program is problem focused and applied to the extent that emphasis is placed upon the importance of learning through involvement in ongoing, contemporary social issues and concerns.

The program is interdisciplinary and comparative, drawing materials and approaches from various social sciences. Field work and practicum courses are available to interested students. In order to facilitate studies in cross-cultural theory and practice, ethnographic experience is available in diverse cultural contexts.

The major in sociology must take 8 courses in sociology to be divided among:

I. Introductory (Soc. 100, 105, 120)
II. Theory (Soc. 290a, 290b, 291a, 293, 297b, 245)
III. Methods (Soc. 170, 271b, 271c, 274)
IV. Practicum (Soc. 201, 299)
V. Electives (all other courses offered in sociology)

(Note: other courses may be added to the above listing from time to time)

Majors are advised to complete their 8 courses by taking at least one introductory course, one methods course, at least one theory course, at least one term of Soc. 201 *or* 299 in their senior year and other courses in sociology to make up 8 courses.

In addition, majors must take 4 courses in related fields; by university rule, the student must take 9 courses in unrelated fields. Certain courses in geography, psychology, history, government, economics, philosophy and education are considered related.

GRADUATE PROGRAM

At the present time, the department is not accepting students for the Master of Arts degree.

COURSES

100. INTRODUCTION TO SOCIOLOGY.

This is a general introductory course to the discipline of sociology, intended mainly for students who wish to gain a broad, general overview of the field, its areas of study, methods of inquiry and conceptions and analyses of society. This course will be offered on a Credit/No Record basis only.

Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Peck.

105. INTRODUCTION TO SOCIAL PSYCHOLOGY.

An examination of the relationships between the individual and the social system. The theories, methods and findings of social psychology will be examined as they illuminate the major, enduring themes that confront human beings individually and collectively: e.g. the bases of knowledge and understanding; the individual and authority; freedom, reason, and responsibility; development, identity and individuality; exchange and justice, etc.

Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Sampson.

110. INTRODUCTION TO FEMALE STUDIES.

An overview of the problems, issues and research on sex role dichotomization and the bio-social systems which produce and maintain them. While particular emphasis will focus on material from sociology and other relevant social sciences, topics from the humanities and the biological sciences will also be considered.

Full course, Module 2. Ms. Fields.

120. INTRODUCTION TO SOCIAL ANTHROPOLOGY.

An analysis of primitive society with a focus on social structure. The emphasis will be upon the development of a comparative perspective. The latter part of the course will explore phenomenological and existential anthropology and its implications for understanding other cultures.

Full course, Modules 1-2. Mr. Gerber.

170. SOCIOLOGICAL RESEARCH METHODS.

This course will provide a general introductory survey of various methods employed in social scientific inquiry including, for example, the sample survey, interviewing, questionnaire approaches, experimental methods, etc. The course will examine general issues involved in research design and research evaluation as well as issues involved in selecting methods to suit particular research problems and questions.

Full course, Modules 3-4. Ms. Fields.

Geography 171. SOCIAL GEOGRAPHY.

Refer to course description under Geography.
Ms. Buttimer, Ms. Martensson.

200. DIRECTED READINGS IN SOCIOLOGY.

Variable credit.
Modules 1-2-3-4-5. Staff.

201. SPECIAL PROJECTS IN SOCIOLOGY.

Variable credit.
Modules 1-2-3-4-5. Staff.

202. WORCESTER COMMUNITY STUDY.

The Worcester Community Study is a research seminar oriented to descriptive evaluation and active research on any facet of the social structure of the Worcester community. Students who wish to add a research dimension to their special projects, internships and practicums are encouraged to participate in this seminar. Participants in the seminar will be expected to help

coordinate small research teams engaged in a long-term study of the Worcester community.
Full course, Modules 1-2. Mr. Peck.

205b. WORKSHOP IN SMALL GROUP AND INTERPERSONAL PROCESSES: ADVANCED TOPICS IN SOCIAL PSYCHOLOGY.

This is an intensive, unstructured small group experience designed for students who have completed the small group theory course (291b) and who now wish to enrich their intellectual knowledge by a direct self-analytic group experience. The class will be organized into an unstructured group and will spend the term examining the material which is generated by this group. This course is offered on a Credit/No Record basis only.
Full course, Module 3. Mr. Sampson.

205d. WORKSHOP IN PSYCHO- AND SOCIODRAMA TECHNIQUES: ADVANCED TOPICS IN SOCIAL PSYCHOLOGY.

This is a one module workshop that examines the techniques of psychodrama and sociodrama (e.g. role-playing) through the student's direct participation in these techniques. Prerequisites include Introductory Social Psychology and Small Group and Interpersonal Theory. Offered on a Credit/No Record basis.
Full course, Module 4. Mr. Sampson.

220b. ETHNOLOGY: IRISH CULTURE AND POLITICS.

This is an intensive seminar for the study of the Celtic nation. We will examine the social-political history, ethnic identity, contemporary conflict, and music, art and literature as manifestations of the traditional and modern Irish culture.
Full course, Module 3. Ms. Fields.

224. YOUTH IN AMERICA.

This course will focus on the basic issues of youth in the 1960's and 1970's. Among the topics to be reviewed will be the youth movements of the 1960's (political, cultural and educational), the changing nature of youth attitudes over the last decade and the causes of such change. Emphasis will be placed on both institutional and individual analysis of the forces that have affected the behavior of youth over the last decade and will affect them in the future.
Full course, Modules 3-4. Staff.

225. SOCIOLOGY OF SEX ROLES. *Not offered, 1975-76.*

The focus of the course is on the sex role socialization process. This is considered in relation to social class and caste, cultural variables, institutions, political and psychological effects and implications.
Ms. Fields.

241. SOCIOLOGY OF LEARNING.

An analysis of how the organizational structures of educational institutions affect the learning of students. Analysis of how such organizations are structured, how they maintain themselves and how they change. Particular emphasis will be placed on high schools and on the development in this class of a learning environment that facilitates learning. Seminar is primarily for juniors and seniors.
Full course, Modules 1-2. Staff.

243. POLITICAL SOCIOLOGY.

Politics may, for certain purposes, be seen as the result of structures of sentiment and power from which particular policies and institutions emerge. This course examines, in theory and research, class and political behavior, the political economy of power, sources of conflict and stability in modern society and social movements.
Full course, Modules 3-4. Mr. Ross.

244. RACE AND ETHNIC RELATIONS.

The purpose of this seminar is to enable the participants to begin to develop a theoretical framework for analyzing problems of racism and to conceptualize solutions to the problems consistent with the analysis.
Full course, Modules 1-2. Staff.

245. THEORETICAL MODELS IN SOCIAL ACTION.

A critical evaluation of anthropological, sociological and literary sources and their application to contemporary social problems.
Full course, Module 1. Mr. Gerber.

246. SOCIAL PLANNING AND SOCIAL POLICY.

This seminar will be concerned with the analysis of policy issues related to urban social problems. The seminar will address itself to three major objectives: 1) how social policy is formulated; 2) how social problems are analyzed from the perspective of the policy makers; 3) how social policy addresses problems of social importance in urban society. The students will be introduced to the literature of the field, and will be given opportunities to analyze specific urban social problems.
Full course, Modules 3-4. Staff.

247. URBAN SOCIOLOGY.

The ethnic and other communities of the big cities will be examined through the literature of historical and community studies; these materials will provide the basis for interpreting urbanism and the politics of the recent period. The political machines, the functions of social policy and the problems of our big cities are some of the broader issues discussed.
Full course, Modules 1-2. Mr. Ross.

253. PRISONS.

This course shall examine prisons as socio-political functions and their impact on the social system. The focus is on treatment of prisoners, rehabilitation, political imprisonment, social norms and definitions of criminality, deviance and treatment. The curriculum for study includes the Attica Rebellion, torture of political prisoners, use of

behavior-modification and other psycho-neurological treatment methods.
Full course, Module 4. Ms. Fields.

254. SOCIETY OF RELIGION. *Not offered, 1975-76.*

This course starts with an analysis of the breakdown of the medieval metaphysics and the founding of the modern world. The objective of this course is to introduce the student to the sociological perspective on religion and to apply this perspective to an analysis of the contemporary religious situation in particular and to the current status of epistemic communities in general. Theorists whose positions will be emphasized are: Durkheim, Weber, Mannheim, Eliade, Berge and Schutz.
Full course. Mr. Smith.

255. SEMINAR IN THE FAMILY.

Critical, historical and feminist perspectives on the institutions of marriage and the family. The seminar will consider comparative, historical and theological analyses of the social role of women vis-a-vis the role relationships inherent in marital institutions.
Full course, Module 2. Ms. Fields.

256. SOCIAL STRATIFICATION.

An analysis of the major dimensions of social stratification in contemporary society. Economic class, social status, power, class consciousness, social mobility and the consequences of class difference.
Full course, Modules 1-2. Mr. Peck.

263a. DEVIANCE: JUVENILE DELINQUENCY.

Not offered, 1975-76.

This course has two fundamental objectives: 1) to introduce the student to the literature, research and conceptual problems in the field of deviance; and 2) to examine two conceptual frameworks out of which contemporary definitions of deviance emerge. The specific focus will center around delinquency and criminal behavior. The major purpose of this course is to increase the student's sensitivity to some of the major factors affecting deviant behavior.
Half course. Staff.

263b. DEVIANCE: SOCIAL CONTROL.

Not offered, 1975-76.

This course is an extension of 263a. The focus will be upon deviant behavior and the mechanisms of social control.
Half course. Staff.

263c. DEVIANCE: DRUGS. *Not offered, 1975-76.*

This course will view drug taking as a social phenomenon. Hence, the focus will be on the social aspects of drug taking.
Half course. Staff.

265. SOCIAL MOVEMENTS. *Not offered, 1975-76.*

This course will discuss the general characteristics of modern social movements with the New Left and other protests of the sixties as extended case examples. Problems of recruitment, organization and ideology will be analyzed. The form of the course will depend on the size of registration.
Full course. Mr. Ross.

Geography 270. URBAN SOCIAL GEOGRAPHY.

Refer to course description under Geography.
Ms. Buttimer.

271b. FIELD METHODS: CONCEPTS AND ISSUES IN ANTHROPOLOGY.

This course will deal with theoretical issues in the conduct of anthropological field work, including an intensive survey of the literature, problems and prospects. In addition, instruction and use of camera, tape recording equipment, etc. involved in field work will be covered.
Full course, Module 3. Mr. Gerber.

271c. FIELD METHODS: PRACTICUM IN ANTHROPOLOGY.

This course will include on-site field experience where students will obtain and conduct a limited field research project. Prerequisite: (271b) Concepts and Issues in Anthropology.
Full course, Module 4. Mr. Gerber.

274. RESEARCH ON ORGANIZATIONS.

The primary focus of this course will be on the issues and concepts involved in studying educational organizations. Students will work jointly on a study of an educational institution as an attempt to conceptualize the issues involved in studying an organization as well as applying knowledge learned in the classroom. This course may be applied toward the departmental methods requirement.
Full course, Modules 1-2. Staff.

282. INDUSTRIAL SOCIOLOGY.

This course is concerned with the study of social relations in the industrial setting. The course will cover the research tradition beginning with the human relations school and extending through the sociology of work and occupations. A special focus of the course will be on workers, organizations and the sociology of labor.
Full course, Modules 3-4. Mr. Peck.

290a. SOCIOLOGICAL THEORY: CLASSICAL.

Not offered, 1975-76.

Beginning with the European writings of the early 16th century and extending to the expression of social theory at the turn of the 20th century, the course focuses on the way in which certain social themes dealing with human relationships were treated in the classic works of outstanding European social philosophers and theoreticians. These social themes refer to issues of value

consensus and social conflict, established power and rebellious disorder, the social person and the alienated human. Oriented to a sociology of knowledge perspective, the range of ideas beginning with Machiavelli and More and ending with Weber and Simmel are considered in the context of this history and social structure of national capitalism as it emerged in the specific settings of Italy, England, France and Germany.
Full course. Mr. Peck.

290b. SOCIOLOGICAL THEORY: CONTEMPORARY.
Not offered, 1975-76.

Social developments in the United States during the post World War II epoch have given rise to a variety of theoretical views in the field of sociology. The diversity of approach and fragmentation of theoretical stance will be related to significant changes in social structure and political economy of the United States during the past three decades. The relationship between social theory and political ideology will be considered throughout.
Full course. Mr. Peck.

291b. SOCIAL PSYCHOLOGICAL THEORY: SMALL GROUP AND INTERPERSONAL THEORY.

This is an intensive course designed to introduce the student to some of the major concepts and theories which have been developed to understand small group and interpersonal processes. The formulations of persons such as Freud, Sullivan, Mead, Bion, exchange theorists and others will provide the major focus of the course.
Full course, Module 2. Mr. Sampson.

293. ANTHROPOLOGICAL THEORY: PHILOSOPHY OF ANTHROPOLOGY.

A critical evaluation and examination of the philosophical bases for anthropological inquiry. Consideration will be given to such areas as the rationale for cross-cultural studies, the effects of Western cognition on the development of anthropology as a discipline, French structuralism and existential and phenomenological modes of inquiry.
Full course, Module 2. Mr. Gerber.

294. INTERNSHIP IN SOCIOLOGY.
Not offered, 1975-76.

Supervised field training in community and organized settings. This is the equivalent of from 2-4 full courses in sociology.
Variable credit. Staff.

297b. TOPICS IN SOCIOLOGICAL THEORY: STUDIES IN MARXISM.

This seminar will examine some of the basic themes of Marxism through close study of a major primary source, supplemented with class presentations and secondary reading. The Marxian theoretical and philosophic origins will be explored, and the political economies of Marxism will be introduced.
Full course, Modules 3-4. Mr. Ross.

298. SENIOR SEMINAR IN SOCIOLOGY.
Not offered, 1975-76.

This course consists of a year-long seminar devoted to the examination of major themes and issues in sociology. It is the equivalent of 2 full courses in sociology.
Two full course credit. Staff.

299. THESIS-SEMINAR.

The course combines seminar with independent study on selected topics. The course is intended for senior sociology majors. Each member of the sociology faculty offers a set of topics and thesis-issues; students should sign up with the faculty person whose areas of interest are most congruent with their own. Emphasis in the course is upon independent work undertaken with faculty guidance and supervision. It is possible to take this as a year-long course that results in the submission of a thesis, thereby making selected students eligible to be considered for honors in sociology.
Four full course credit.
Modules 1-2-3-4. Staff.

Spanish

(See Department of Foreign Languages and Literatures.)

Theatre Art

(See Department of Visual and Performing Arts.)

Visual and Performing Arts

ART

DEPARTMENT FACULTY

Donald Krueger, M.F.A., Associate Professor of Art, Associate Chairman for Art
Samuel P. Cowardin, III, Ph.D., Associate Professor of Fine Arts
Peter M. Barnett, Ph.D., Assistant Professor of Art History
Sante Graziani, M.F.A., Associate Professor of Art (Affiliate)

UNDERGRADUATE PROGRAM

Courses in art are designed to develop understanding and sensitivity in the visual arts and to enable students to think and communicate visually. Majors in art history and in studio art are offered.

Admission to the art history major program requires at least a B in Art 11 (or an equivalent course) and staff approval. Students must complete 6 courses in art history beyond the introductory level, 4 studio courses, 2 courses in related areas and a senior project in art history.

Work for the studio art major is done at the School of the Worcester Art Museum. Clark students are admitted to study at the school by portfolio evaluation and permission of the Art Program Chairman and are expected to observe the regulations of the school. Studio majors must complete a minimum of 10 studio courses, 2 courses in art history (normally Art 11) and 2 courses in related areas. Depending upon professional interest, the student is advised to elect studio courses beyond the required minimum, up to 16 courses.

Related areas include: film studies, theatre arts, music and aesthetics.

COURSES

11. INTRODUCTION TO WESTERN ART I.

Ideally the first half of a four-module sequence, this course covers classical, medieval and early Renaissance art. The first several weeks are devoted to an examination of basic elements in the visual arts, and to certain fundamental matters of terminology and approach. Selected works are then discussed as exemplars of style and artistic quality in the context of the leading ideas of their respective eras. Because of the selective processes of time, architecture and sculpture must receive slightly greater emphasis than painting. Students are encouraged to observe original works in local museums.
Full course, Modules 1-2. Mr. Cowardin.

11. INTRODUCTION TO WESTERN ART II.

A continuation of 11, *Introduction to Western Art I.* The course will cover the history of Western art from the Renaissance up to the present, emphasizing painting, but touching on sculpture and architecture. Emphasis will be placed on characteristics of individual and period style within the works themselves, the primary aim being to develop sensitivity to pictorial elements. In addition, the social and historical background of the artists will be considered where appropriate. Evaluation will be based on ability to analyze and discriminate visually, rather than on memorization of facts. Will offer a Sunday trip to the Boston museums.
Full course, Modules 3-4. Mr. Barnett.

12. SURVEY OF PAINTING.

A general introduction to the art of painting, covering a wide range of examples from East and West. The approach is historical only in that the material is taken up more or less in historical sequence and the stylistic development is viewed against the background of changing ideas. But matters of technique, design and expression receive due attention.
Full course, Modules 3-4. Mr. Cowardin.

88. DIRECTED READINGS.

Modules 1-2-3-4-5. Staff.

89. SPECIAL PROJECTS IN VISUAL ARTS.

Independent studio art study. By permission of the instructor.
Variable credit.
Modules 1-2-3-4-5. Mr. Krueger.

98. SENIOR PROJECT IN STUDIO ART.

Full course, Modules 1-2, 3-4. Mr. Krueger.

99. SENIOR PROJECT IN ART HISTORY.

Individual research culminating in a major paper. Periodic meetings with the staff to evaluate and discuss progress. Required of all majors in art history.
Full course, Modules 1-2, 3-4. Staff.

100. ART IN NEW ENGLAND MUSEUMS.

A close study of the local collections and those within a radius of about an hour's driving time of Worcester. The particular strengths of the various collections will be emphasized, and there will be intensive class preparation for the gallery visits. Familiarity with some phase of art history would be helpful to the individual but is by no means a requirement. Discussion, reports and a term paper. Enrollment by permission.
Full course, Module 5. Mr. Cowardin.

105. OUTER SPACE/INNER SPACE: THE DIMENSIONS OF SPACE IN PICTORIAL ART.

This course is part of the freshman interdisciplinary program "Concepts of Space." It will examine the problems of space in the pictorial arts on several levels, including descriptive, participatory, affective, intrinsic and extrinsic. Throughout, the polarity of external and internal space/objective and felt space will be of prime concern. Requirements will include a photographic analysis of space by each student.
Full course, Modules 1-2. Mr. Barnett.

110. THE ART AND ARCHAEOLOGY OF GREECE AND ROME. *Not offered, 1975-76.*

Refer to course description under Classics, Department of Foreign Languages and Literatures.
Full course, Modules 3-4. Ms. Toepel.

115. SELECTED SUBJECTS IN MEDIEVAL ART.
Not offered, 1975-76.

A brief overview of the main phases of medieval art is followed by a series of student reports intended to illuminate specific subjects or deal with special problems. A maximum of student participation, each member of the course being responsible for at least two reports. Enrollment limited. Prerequisite: one course in art history.
Full course, Modules 3-4. Mr. Cowardin.

116. ART OF THE TRACENTO IN SIENA AND FLORENCE.
Not offered, 1975-76.

Late Gothic art in Siena and Florence, with emphasis on painting. Examines the stylistic currents and countercurrents which led into the art of the early Renaissance. Discussions will seek to point up the significance of the great imitators, Duccio and Giotto, and to appraise some of the lesser known but important masters of the later fourteenth century. To the extent of available time, the study of the Sienese school will carry into the Renaissance.
Half course, Module 2. Mr. Cowardin.

120. ITALIAN RENAISSANCE ART: 15TH CENTURY.
Not offered, 1975-76.

The course is concerned with art in the context of developing humanism and rationalism, mainly in Florence, but with excursions into northern Italy. The aim is to delineate the character of early Renaissance art and to distinguish its principal stylistic currents as they move toward confluence in the High Renaissance. Particular attention is given to the ideas of Alberti and some of the intellectuals in the circle of the Medici. Architecture, sculpture and painting receive approximately equal emphasis.
Full course, Modules 1-2. Mr. Cowardin.

121. ITALIAN RENAISSANCE ART: 16TH CENTURY.
Not offered, 1975-76.

The great figures of the High Renaissance art in Florence and Rome are the focus of the first part of the course. It will try to define, through readings and discussion, the special aesthetic qualities of this particular "classic moment," seen against the political and intellectual background. The course must also confront the difficult questions relating to the evolution of Mannerism, as well as the definition of this phenomenon. Finally, the scene will shift briefly to Venice. Class participation is encouraged and the coverage is kept flexible enough to accommodate it.
Full course, Modules 3-4. Mr. Cowardin.

122. MICHELANGELO AND THE HIGH RENAISSANCE.

Concentrates on Michelangelo's work in architecture, sculpture and painting, taking into account personal, religious, intellectual and political influences on his life. His style will be viewed in relation to the Renaissance background as well as the Mannerist trends of the sixteenth century.
Full course, Modules 3-4. Mr. Cowardin.

123. VENETIAN ART.

Art in the Veneto from the twelfth century through the eighteenth, with emphasis on the Renaissance. Seeks to define the qualities that distinguish the work of this region, especially in painting. The major figures, such as Palladio and Titian, will be studied in depth in the context of Venetian humanism and other elements of contemporary culture.
Full course, Modules 1-2. Mr. Cowardin.

124. NORTHERN RENAISSANCE PAINTING.
Not offered, 1975-76.

Concentrates on painting in Flanders from Van Eyck to Bruegel. Style, technique and expression in representative works will be viewed in relation to their own background and to contemporary work in Italy. A secondary focus will be on the impact of Italian influence upon the art of France, Germany and the Netherlands in the sixteenth century.
Half course, Module 1. Mr. Cowardin.

130. 17TH CENTURY—THE HIGH BAROQUE.

The course will deal with the principal masters of European painting in the seventeenth century. It will emphasize close visual analysis of particular works in order to isolate the expressive intention of each artist as reflected in devices and techniques he employs. There will be a secondary emphasis on the social circumstances which underlie the broad range of national styles.
Full course, Modules 1-2. Mr. Barnett.

131. 18TH CENTURY—ROCOCO TO REVOLUTION.

The course is a continuation of the above, but the emphasis will be reversed. There will be a primary preoccupation with relationships between the art of the period and the social circumstances which produced it. There will be an attempt to relate events in painting both to political and social events and to parallel currents in the arts in general. Discussion will cover the broad social and philosophical questions raised by the painting examined.
Full course, Modules 3-4. Mr. Barnett.

140. 19TH CENTURY PAINTING — ROMANTICISM AND REALISM.

The course will cover European painting from the French Revolution to 1900, with an emphasis on painting in France and England. Stress will be placed on the social and intellectual context from which the art emerged, as well as upon internal developments in style. Special attention will be paid to stylistic and intellectual directions which led up to and through impressionism toward the emergence of modern art. Emphasis will also be placed upon the aesthetic ideas underlying successive shifts in style, and upon allowing students the opportunity to deal with these ideas in written work.
Full course, Modules 1-2. Mr. Barnett.

141. 20TH CENTURY — MODERN MOVEMENTS.

This course will deal with the major movements in European and American art since 1900. There will be an emphasis on developing a framework in which to understand and deal with both the individual and the broader breakdown of traditional aesthetic boundaries. The course will begin by seeing the early modern movements in their historical context, but will move progressively toward a work by work confrontation with isolated examples, emphasizing individual student response. A major aim of this course will be to encourage students to develop personal approaches and standards in their interaction with works of art.
Full course, Modules 3-4. Mr. Barnett.

150. INTRODUCTION TO ORIENTAL ART: ANCIENT NEAR EAST AND INDIA.

A preliminary look at the Near East is designed to acquaint the student with the styles and iconography of ancient Mesopotamian and Iranian art as a background for developments in India and Central Asia. The major part of the course deals with Indian art from prehistoric times through the period of the Moslem dynasties, and with the spread of Indian culture into Indo-China and Indonesia. Monuments of Buddhist and Hindu art are studied and discussed in the light of the faiths which inspired them. The philosophy, mythology and iconography of these faiths are the subject of background readings intended to inform the discussion. Aside from its intrinsic value, this material is basic to further study of Buddhist art in China and Japan.
Full course, Modules 1-2. Mr. Cowardin.

151. INTRODUCTION TO ORIENTAL ART: CHINA AND JAPAN.

The greater part of the course (about two thirds) is devoted to the art of China from the beginnings through the Yuan Dynasty. As an introduction, it has no pretensions to completeness, but singles out for study certain periods and classes of objects, such as Shang and Chou bronzes, Buddhist sculpture and Sung paintings, at the expense of others, such as ceramics and later paintings. The objective is to arouse interest and develop sensitivity to different artistic points of view and aesthetic values, while laying the foundations for further study. The same approach is carried over to Japan in the remainder of the course, where emphasis is placed on Buddhist sculpture, narrative and landscape scroll paintings and color woodblock prints.
Full course, Modules 3-4. Mr. Cowardin.

160. ELEMENTS OF ARCHITECTURE—THEORY.

Not offered, 1975-76.

The course will consider architecture as a form of expression, dealing with the major elements of architectural language generically rather than historically. Topics covered will include form, structure, space and function. The major historical styles will be referred to as appropriate to illustrate concepts being discussed. Student work will involve a series of small projects, both written and manual; there will be no examination. Emphasis in student work will be on first-hand experience with concepts and works.
Half course, Module 1. Mr. Barnett.

160. ELEMENTS OF ARCHITECTURE—DESIGN.

Not offered, 1975-76.

The course will consider architectural design from a conceptual rather than a technical viewpoint, and will involve students in their own designs. The emphasis will be on understanding and pursuing a rational design process, rather than on the success of the design itself by practical or aesthetic standards. Student work will be an attempt to resolve operationally the tension between the architect's roles as master of expression and servant of human needs. Will offer an opportunity for a juried project.
Full course, Module 2. Mr. Barnett.

161. 20TH CENTURY ARCHITECTURE— EARLY MOVEMENTS. *Not offered, 1975-76.*

The course will cover developments in European and American architecture from the end of the 19th century through the early masters of modern architecture. It will concentrate on the ideas and works of the major figures: Sullivan, Wright, Gropius, Mies van de Rohe and Le Corbusier. Emphasis will be not only on the development of style, but also on the social basis of their work.
Half course, Module 3. Mr. Barnett.

161. 20TH CENTURY ARCHITECTURE— CONTEMPORARY MOVEMENTS. *Not offered, 1975-76.*

The course will deal with movements in architecture since World War II, emphasizing developments which redefine the direction established by the International School of the 1920's. In addition to the work of contemporary architects, futuristic visions of architecture and urban design will be looked at and evaluated. As much as possible, first-hand experience of works in the immediate area will be included.
Half course, Module 4. Mr. Barnett.

162. PROJECTS IN URBAN DESIGN.

This course will involve interested students in the planning and direction of the course, and thus cannot be certainly defined as to scope and content. Tentatively, it will involve students in a design project located in the immediate Worcester area, and may involve both theoretical studies and field work in addition to design. It will center around individual or group projects, coordinated with meetings of the whole group. Required work to be established by the class.
Full course, Module 5. Mr. Barnett.

170. VISUAL DESIGN I — TWO DIMENSIONAL FORM AND COLOR.

A studio course on campus designed to introduce the student to the nature of visual language and the creative process and to develop abilities for original creative thought and action. Basic two-dimensional studio problems in organization, color relationships, form, space, design and visual communication are presented. Work in addition to the scheduled studio hours will be required. Open to non-majors.
Full course, Modules 1-2. Mr. Krueger.

171. VISUAL DESIGN II — SPACE AND THREE DIMENSIONS.

A continuation of 170 to include the study of depth and plastic illusion and basic three-dimensional structural principles and forms. 170 is not a prerequisite but is recommended. Open to non-majors.
Full course, Modules 3-4. Mr. Krueger.

172. VISUAL STUDIES.

A group of one-module studio courses of varying content designed to encourage the development of expressive and communicative visual arts skills. Opportunity is provided for independent study in traditional, contemporary and experimental forms and materials. Topics include: Environmental Space Design, Drawing as Analysis, Drawing as Expression, Painting, Contemporary Forms, and others to be determined by students' special interests and skills. 170 and 171 or the equivalent are recommended as preparation. Open to non-majors. Enrollment by permission of instructor.
Half courses, Modules 1-2-3-4-5. Mr. Krueger.

174. CONTEMPORARY DIRECTIONS.

A studio course, with discussion and museum visits, which will be concerned with a practical, experiential examination of current movements, directions, styles and attitudes in the visual arts, primarily American. Students will be expected to study in depth, through their own studio work, a specific contemporary style or to experiment with a number of modes. Enrollment by permission of the instructor. Formerly Art 142.
Full course, Module 5. Mr. Krueger.

176. DRAWING: PERCEPTION AND SELECTION.

Not offered, 1975-76.

This will be a course in drawing from nature, including still-life, the human figure, portraiture and landscape. The emphasis will be on the development of skills in seeing, and in recording what you see selectively. There will be no expectation of previous experience, or of special talent; evaluation will be entirely on the basis of effort and seriousness of interest. Drawing as expression, or the exploration of media, will not be emphasized.
Half course, Module 1. Mr. Barnett.

188. PHOTOGRAPHY. *(at the Craft Center)*

A beginning course and an intermediate/advanced program. Practice in the techniques and aesthetics of photography as a medium of personal expression. Lectures, field trips and discussions supplement studio and dark room work. A variable setting 35mm or 2-1/4 x 2-1/4 camera is required. Materials fee. Not to be credited toward the major in studio art.
Full course, Modules 1-2.
Full course, Modules 3-4. Craft Center Staff.

188. PRINTMAKING. *(at the Craft Center)*

A course designed to familiarize the student with one or more of the graphic techniques: etching, engraving, woodcut, silkscreen. For experienced students, the course will emphasize technique and quality in printmaking. Materials fee. Not to be credited toward the major in studio art.
Full course, Modules 1-2.
Full course, Modules 3-4. Craft Center Staff.

188. CERAMIC DESIGN. *(at the Craft Center)*

An exploration of form, texture and color using basic clayworking methods of hand-forming, coil building and slab construction. Emphasis is on developing an awareness of the elements of sculptural design rather than an attempt to produce utilitarian pottery. Advanced students may be accepted by permission of the instructor or advanced sections may be offered. Materials fee. Not to be credited toward the major in studio art.
Full course, Modules 1-2.
Full course, Modules 3-4. Craft Center Staff.

199. MUSEUM SCHOOL STUDIO COURSES.

A general designation for all courses at the School of the Worcester Art Museum. Open only to studio art majors by portfolio evaluation and permission of the Art Program Chairman. These are full-year courses (Modules 1-4) and may not be entered in mid-year:

Drawing and Painting I.
Visual Design I.
Three-dimensional Design I.
Drawing and Painting II.
Life Drawing and Painting I.
Space and Structure.
Visual Design II.
Technics.
Illustration I.
Sculpture I.
Photography I.
Painting III.
Figure Sketch.
Illustration II.
Three-dimensional Design II.
Graphics I.
Photography II.
Sculpture II.
Life Drawing and Painting II.
Visual Design III.
Independent Study.

See the Museum School catalog and schedule for complete course descriptions and listings.
Double courses, Modules 1-4. Museum School Staff.

FILM STUDIES

PROGRAM FACULTY

Anthony W. Hodgkinson, Associate Professor Film Studies; Associate Chairman for Film Studies Program
William Chayes, B.Arch., Lecturer in Film Studies

UNDERGRADUATE PROGRAM

The program in Film Studies is designed to enable the student to acquire a critical understanding and appreciation of our youngest art. A full understanding of film involves two related activities: 1) the viewing, discussion and evaluation of a large number of significant works; and 2) initial attempts, through simple film and/or video production exercises, to express oneself in a technically demanding medium.

The emphasis of most courses is on the viewing/discussion/assessment aspect; they are designed to have particular reference to the historical and social impact of film. The production courses are deliberately set at an introductory, elementary level; there is no intention of providing a professional training in either film or video.

There is no major in Film Studies *per se* offered at present, but attention is directed to the possibilities both of a student-designed major and (for Art majors) a studio major with an emphasis on film.

COURSES

10. ELEMENTS OF FILM.

A survey of the varied techniques used in the making of all screen communications (film, television, video): the invention of the language; silent film narrative; editing; music; speech and sound. Lecture/screenings; term papers and readings. Either this course or 15 is a prerequisite for other Film Studies courses. Open to freshmen.
Half course, Module 1.
Half course, Module 5. Staff.

11. ASPECTS OF FILM HISTORY IV.

Under this general heading, various facets of the 75 years of cinema will be explored in a series of lecture/screenings and discussions. Content varies each time the course is taught, and it may be taken more than once. This year, the intention is to survey the history of the Hollywood musical. Term papers and readings. Prerequisite: 10 or 15.
Full course, Modules 1-2. Mr. Hodgkinson.

12. FILM AND SOCIETY IV.

A thematic exploration of the ways the cinema has reflected/affected its contemporary society. Content varies each time the course is taught, and it may be taken more than once. This year, it is planned to consider the science-fiction film as a commentary on contemporary and future society. Lecture/screenings and discussions, term papers and readings. Prerequisite: 10 or 15 and consent of instructor.
Full course, Modules 3-4. Mr. Hodgkinson.

13.GREAT FILM DIRECTORS IV.

A series of lecture/screenings in which the canon of work of various significant directors will be studied and assessed. The director varies each time the course is taught, and it may be taken more than once. Directors previously dealt with have been Preston Sturges, Luis Bunuel and Stanley Kubrick. This year, attention will be paid to the work of Ernst Lubitsch. Prerequisite: 10 or 15, and consent of instructor.
Half course, Module 2. Mr. Hodgkinson.

14. LITERATURE OF FILM.

A seminar in which some of the significant books of film theory, aesthetics, history etc. are studied in detail and in depth. Prerequisites: 10 or 15, plus one of 11, 12 or 13.
Half course, Module 2.
Half course, Module 4. Mr. Hodgkinson.

15. THE FILM-MAKING TEAM.

In a series of lecture/screenings, the contributions to the final film of each of the major members of the studio team — writer, director, actor, etc. — are examined. Either this course or 10 is a prerequisite for other Film Studies courses. Open to freshmen.
Half course, Module 3. Mr. Hodgkinson.

88. DIRECTED READINGS.

A sequence of structured readings on a given topic approved and directly supervised by the instructor. Prerequisite: consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

89. SPECIAL PROJECTS.

Independent research on a particular problem or an original creative project directly supervised by the instructor. Prerequisite: consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

100. ELEMENTARY FILM PRODUCTION.

A practical workshop in super-8mm film production. Student work will be analyzed and criticized. Prerequisite: 10 or 15.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Chayes.

101. FILM/VIDEO PRODUCTION.

A practical workshop in which production both of super-8mm films and half inch videotape may be explored at a slightly more advanced level than in Film 100.
Prerequisite: 100 plus consent of instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Chayes.

MUSIC

DEPARTMENT FACULTY

Relly Raffman, A.M., George N. and Selma U. Jeppson Professor of Music, Department Chairman
Wesley M. Fuller, M.Mu., Associate Professor of Music
Gerald R. Castonguay, Ph.D., Assistant Professor of Music
Susan Clickner, B.M., Assistant Professor of Voice (Affiliate)
Evelyn Fuller, M.Mu., Assistant Professor of Piano (Affiliate)
Virginia Leguia, M.S., Assistant Professor of Flute (Affiliate)
David Sussman, B.A., Assistant Professor of Guitar (Affiliate)
Barbara Levy, B.M., Director of Choral Activities
Allan Mueller, Affiliate in Piano

UNDERGRADUATE PROGRAM

The department offers courses designed to teach students how to listen to music intelligently, to develop a comprehension of music on its own terms and to acquaint students with representative works from various periods of music history.

The music major includes the following courses:

Prerequisite: Music 120 (Rudiments), or placement examination.

Theory: 121, 122, 123, 124, 125.

Music History: 12, 13, 14, 15, 119.

Performance: a minimum of 8 modules in 107, 117, 127 or 137.

Related areas: a full course in Fine Arts, Theatre Art or Film Studies; or a full course in Aesthetics.

A minimum essentials test, including sight-singing and dictation at a level of proficiency necessary for the successful pursuance of the major, must be passed during the sophomore year. A keyboard proficiency examination must be passed during the junior year. As a senior, the music major, with the permission of the department, may elect two full courses of tutorial work in one or more of the following areas: Music History (118), Composition (128) or Theory (138). Those wishing to concentrate in a performance area must pass an audition at the beginning of the junior year. In addition, all majors must complete nine full courses outside of Philosophy 16 (Aesthetics), courses in visual and performing arts and literature.

Individual instruction in piano, jazz piano, flute, guitar, violin and voice will be offered for credit during the 1975-76 academic year. Arrangements for lessons should be made at the music office during the registration period. Practice rooms are available without charge.

COURSES

10. INTRODUCTION TO MUSIC.

Designed for the non-major, this course is a prerequisite for entrance into all music history or survey courses. No credit towards the major is allowed. Open to freshmen.
Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

110. INTRODUCTION TO MUSIC.

Special topics in music pedagogy. For majors only.
Half course, Modules 1-2-3-4. Staff.

120. RUDIMENTS OF MUSIC.

An introduction to the fundamentals of music. No previous experience is necessary. Notation, ear-training, sight-singing, score reading and elementary melodic and harmonic organization. Satisfies prerequisite for credit in Music 18 and entrance into Music 121.
Full course, Modules 3-4. Mr. Fuller.

121. PRIMARY THEORY.

A study of the structure of tonal music. Analytical and compositional problems in homophonic, monodic and polyphonic textures. Basic orchestration. Ear-training, sight-singing and conducting. Prerequisite: 120 or entrance examination (given at 1st class meeting).
Full course, Modules 1-2.
Full course, Modules 3-4. Mr. Raffman.

12. MEDIEVAL AND RENAISSANCE PERIODS.

Not offered, 1975-76.

Beginning with early Christian chant, this survey includes a study of the Medieval song and motet, the growth of polyphonic secular and sacred music extending through the sixteenth century culminating with the study of the Renaissance mass and madrigal. Works are performed in class and scores provided for the majority of works studied. Prerequisite: 10, 120 or permission. Offered in alternate years.
Full course, Modules 1-2. Mr. Castonguay.

122. THEORY: MODAL COUNTERPOINT.

Not offered, 1975-76.

Contrapuntal styles in two-, three- and four-part textures of major composers of the 15th and 16th centuries are analyzed and used as a foundation for compositional assignments. 20th-century modal polyphony is also studied. Prerequisite: 121. Offered in alternate years.
Full course, Modules 1-2. Mr. Fuller.

13. BAROQUE PERIOD. *Not offered, 1975-76.*

A survey of music from 1600 to 1750. This course deals with the origins and growth of vocal and instrumental genres (opera, oratorio, cantata, sonata, concerto, etc.) and the wide variety of formal types closing with the works of Bach and Handel. When possible, works are performed in class and scores provided for some of the works studied. Miniature scores will be required for selected works. Prerequisite: 10, 120, or permission. Offered in alternate years.
Full course, Modules 3-4. Mr. Castonguay.

113. J.S. BACH AND HIS MUSIC.

This course focuses on the study of Bach and his music. It investigates the social, historic and cultural setting of Bach's era, and, in particular, it encompasses an intense study of his music including the early cantatas and organ works, the instrumental music from his Cothen period and, finally, the mature cantatas of his Leipzig years. When possible, works will be performed in class and scores will be provided for the majority of works studied. Prerequisite: 10 or 120. Offered in alternate years.
Full course, Modules 1-2. Mr. Castonguay.

123. THEORY: 18TH-CENTURY COUNTERPOINT.

Not offered, 1975-76.

Compositional and analytical problems in the 18th century contrapuntal idiom: two and three-part inventions, canon and fugue. The thoroughbass practice of the 17th and 18th centuries is explored. Final project: the composition of a three or four-voice fugue. Prerequisite: 121. Offered in alternate years.
Full course, Modules 3-4. Mr. Raffman.

14. CLASSICAL AND ROMANTIC PERIODS.

A survey of music from 1750 to 1900. Beginning with a survey of Italian, French and Viennese styles, the course focuses on the music of Mozart, Haydn and Beethoven, and continues with the study of selected works from major composers of the nineteenth century. When possible, works are performed in class. Miniature scores are required for some of the works studied. Prerequisite: 10, 120 or permission. Offered in alternate years.
Full course, Modules 1-2. Mr. Castonguay.

114. BEETHOVEN: THE MAN AND HIS MUSIC.

The study of Beethoven as man and artist. This course explores the social and historical background of Beethoven's Vienna and centers on the study of selected works from the important genres (symphony, chamber music and sonata) throughout Beethoven's career. Miniature scores are required for a number of works studied. Prerequisite: 10, 120 or permission. Offered in alternate years.
Full course, Modules 3-4. Mr. Castonguay.

124. THEORY: 19TH-CENTURY PRACTICE.

Problems in analysis, composition and orchestration in the chromatic style of the 19th century. Works of Beethoven, Chopin, Schumann, Wagner and Brahms are analyzed and used as compositional models. As well, the harmonic language of Impressionism, with its emphasis on scalar control, is examined. Prerequisite: 121. Offered in alternate years.
Full course, Modules 1-2. Mr. Raffman.

15. TWENTIETH-CENTURY MUSIC.

A survey of early 20th-century masterworks. Representative composers: Debussey, Ravel, Prokofiev, Stravinsky, Bartok, Hindemith, Schoenberg, Berg and Webern. Offered in alternate years. Prerequisite: 10 or 120.
Full course, Modules 3-4. Mr. Raffman.

125. THEORY: 20TH-CENTURY PRACTICE.

Compositional techniques of major 20th-century composers are studied and used as a basis for analysis and compositional assignments. Offered in alternate years. Prerequisite: 124 or permission.
Full course, Modules 3-4. Mr. Fuller.

16. CHAMBER MUSIC. *Not offered, 1975-76.*

A survey of selected works of the major composers in the field of chamber music from Haydn to Stravinsky. Trips to concerts in the surrounding area will be made whenever feasible. Offered in alternate years. Prerequisite: 10 or 120.
Full course, Modules 3-4. Mr. Castonguay.

18. PRIVATE INSTRUCTION IN INSTRUMENTS AND VOICE.

Offered in 1975-76, piano, jazz piano, voice, flute, guitar and violin. One quarter course credit per two module sequence is to be held in escrow until a half course is earned and prerequisite passed. Prerequisite for credit: successful completion of Music 120 or passing of entrance examination to Music 121 (given in September and January).
Quarter course, Modules 1-2.
Quarter course, Modules 3-4. Staff.

19. SURVEY: WORLD MUSIC.

Musical styles of cultures not in the Western European tradition. Specific topics vary each time the course is presented, but music of India, Africa and the American Indian will be included in 1976. Prerequisite: 10 or 120. Offered in alternate years.
Full course, Modules 3-4. Mr. Fuller.

119. SURVEY: MUSIC OF THE AVANT GARDE.

Not offered, 1975-76.

Stylistic developments of European and American music composed since 1950. Composers: Stravinsky,

Stockhausen, Cage, Carter, Boulez, Messiaen and others. Offered in alternate years. Prerequisite: 15 or permission.
Full course, Modules 3-4. Mr. Fuller.

130. JAZZ WORKSHOP. *Not offered, 1975-76.*

Those entering the workshop must also register in 131 and are expected to have had practical experience in jazz performance. Offered in alternate years. Prerequisite: permission of instructor.
Half course, Module 2. Mr. Raffman.

131. JAZZ THEORY. *Not offered, 1975-76.*

The progressive harmonic fabric of classical jazz is examined as well as the scalar structures of the avant garde. Aural analysis and compositional exercises. Prerequisite: 121 or permission. Offered in alternate years.
Full course, Modules 1-2. Mr. Raffman.

132. HISTORY OF JAZZ. *Not offered, 1975-76.*

A study of the evolution of jazz style from the early 20th century to the 1960's: Ragtime, Dixieland, the Blues, Swing, Bop, Cool and Avant Garde. Research paper and final examination. Offered in alternate years.
Half course, Module 1. Mr. Raffman.

140. ELECTRONIC MUSIC.

Group and individual instruction in electronic studio techniques. In addition, a selective group of electronic compositions will be studied. The studio is equipped with a Buchla synthesizer. Offered in alternate years. Prerequisite: 120, 121 or permission.
Full course, Modules 1-2. Mr. Fuller.

118. SENIOR TUTORIAL IN MUSIC HISTORY.

Majors only. Permission of instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

128. SENIOR TUTORIAL IN COMPOSITION.

Majors only. Permission of instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

138. SENIOR TUTORIAL IN THEORY.

Majors only. Permission of instructor.
Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

148. SENIOR TUTORIAL IN PERFORMANCE.

Majors only. Audition must be passed at beginning of junior year.
Full course, Modules 1-2.
Full course, Modules 3-4. Staff.

The following musical activities are open to all students, graduate and undergraduate alike. Auditions are held during the first week of Modules 1 and 3. Although no credit is awarded, the transcript of any undergraduate who completes the assigned performance requirements will include a listing of the particular activity for which he or she was registered.

107. Chamber Music Ensembles.
Modules 1-2-3-4. Mr. Fuller.

117. Concert Choir.
Modules 1-2-3-4. Ms. Levy.

127. Choral Society.
Modules 1-2-3-4. Ms. Levy.

137. Orchestra.
Modules 1-2-3-4. Mr. Castonguay.

THEATRE ART

DEPARTMENT FACULTY

Neil R. Schroeder, Ph.D., Associate Professor of Theatre Art, Associate Chairman for Theatre Art
Zeev Raviv, D.F.A., Associate Professor of Theatre Art
Donna Allinson, M.A., Lecturer in Theatre Art
Donald W. Ilko, Ph.D., Assistant Professor of Theatre Art (Affiliate)
Edward J. Herson, M.A., Lecturer in Theatre Art (Affiliate)
Victor A. Becker, M.F.A., Instructor in Theatre Art (Affiliate)

UNDERGRADUATE PROGRAM

The program in Theatre Art is designed to give students both practical and scholarly experience in all phases of theatre. Courses are open to qualified undergraduates who are willing to devote the time and energy which are necessary for their completion. They are designed to develop theatre artists with a sound humanistic education and to prepare those who are interested for graduate training in educational and professional theatre.

Students who take courses in theatre art will be expected as part of their course work to participate in productions of the Theatre Art Program at Clark University. Other students are invited to try out for roles or assume technical positions as an extra-curricular activity.

Theatre courses other than those offered at Clark are available through the Worcester Consortium for Higher Education, particularly at Holy Cross and Worcester State College. Students should consult the listing in the department office at registration time. In most cases, transportation for these courses will be provided by the Worcester Consortium bus.

The General Program. Through the Worcester Consortium and inter-departmentally at Clark, courses are available in the following areas: theatre history and criticism, dramatic literature, theatre education, acting and directing, technical theatre and design and playwriting. All courses without prerequisites are open to any student on an elective basis, and advanced courses are available on an elective basis to those students who have the necessary prerequisites.

The Theatre Art Major. The major program trains students in the fundamentals of various theatre disciplines and prepares them for further training and experience. Each major should plan to concentrate in one of the following areas: acting and/or directing; technical theatre and design; theatre history, criticism and dramatic literature. Those who wish to specialize in theatre education should, insofar as their program permits, pick up another theatre concentration as well. Much of the advanced work in theatre is accomplished through Directed Readings (Theatre Art 88), Special Projects (Theatre Art 89) and Advanced Tutorials, some of which will be created specifically for each student. Advanced tutorials in areas other than acting and directing which are already on the books will be created to meet student demand whenever possible.

The theatre art major consists of a minimum of fifteen full courses in the following categories:

1) *Core Curriculum.* Required of all majors, 3 full courses as follows: T.A. 10, Introduction to Drama; T.A. 17, Basic Play Production I; T.A. 120, Basic Technical Theatre and Design I.
2) *Drama/History Core.* Required of all majors, a minimum of 3 full courses in theatre history and criticism and dramatic literature. At least one of these courses must be in theatre history, chosen from T.A. 150-169 or T.A. 250-269, and at least 2 of these courses must be in materials prior to the twentieth century. Other than theatre history, students may elect to take courses in dramatic literature, chosen from T.A. 180-189 or T.A. 280-289, or taught in other disciplines, such as English, Comparative Literature, Classics, etc.
3) *Major Concentration.* A minimum of 3 additional courses in the theatre major's area of concentration.
4) *Theatre Electives.* A minimum of 3 additional courses in Theatre Art. These may be more courses in the major's area of concentration, they may be in any studio or non-studio area of theatre, or they may be courses in dramatic literature taught in Theatre Art or other departments.
5) *Related Fields.* A minimum of three courses in related fields, with specific courses and the related fields determined by the major's area of concentration.

Within each major concentration other requirements prevail. An outline of the major program for each concentration follows:

Acting and/or Directing Concentration:

Core Curriculum, 3 courses.
Theatre Art 10, 17 and 120.

Drama/History Core, at least 3 courses.
At least 1 course from T.A. 150-169 or T.A. 250-269. 2 or more courses from the following: T.A. 150-169, T.A. 250-269, T.A. 180-189, T.A. 280-289 or dramatic literature courses in other disciplines.

Major Concentration, at least 3 courses.
T.A. 18, Basic Play Production II. 2 or more courses from the following: T.A. 11, 12, 16, 110, 112, 204-207, 242-243, 290.

Theatre Electives, at least 3 courses.
At least 3 additional courses in Theatre Art or in dramatic literature taught in other disciplines.

Related Fields, at least 3 courses.
Music 120, Rudiments of Music. 2 or more courses in music, fine arts, film, non-dramatic literature or philosophy.

In addition, every acting or directing student should acquire proficiency in at least one foreign language.

Technical Theatre and Design Concentration:

Core Curriculum, 3 courses.
Theatre Art 10, 17 and 120.

Drama/History Core, at least 3 courses.
At least 1 course from T.A. 150-169 or T.A. 250-269. 2 or more courses from the following: T.A. 150-169, T.A. 250-269, T.A. 180-189, T.A. 280-289 or dramatic literature courses in other disciplines.

Major Concentration, at least 3 courses.
T.A. 122, Basic Technical Theatre and Design II. 2 or more courses from the following: T.A. 121, T.A. 199 (courses in technical theatre and design taught at Holy Cross) or Advanced Tutorials or other courses in the concentration.

Theatre Electives, at least 3 courses.
At least 3 additional courses in Theatre Art or in dramatic literature taught in other disciplines.

Related Fields, at least 3 courses.
Art 170, Visual Design I. 2 or more courses from the following: Art (in which Art 171, Visual Design II, is strongly recommended), music, film or philosophy.

Theatre History, Criticism and Dramatic Literature Concentration:

Core Curriculum, 3 courses.
Theatre 10, 17 and 120.

Drama/History Core, at least 3 courses.
At least 1 course from T.A. 150-169 or T.A. 250-269. 2 or more courses from the following: T.A. 150-169, T.A. 250-269, T.A. 180-189, T.A. 280-289 or dramatic literature courses in other disciplines.

Major Concentration, at least 3 courses.
3 or more courses from the above list (see Drama/History Core). In addition, T.A. 170, Introduction to Playwriting, may be included in this concentration. The student should be certain that at least 3 full courses are in materials prior to the twentieth century, and he should attempt to assemble a core of courses dealing with a

particular era (i.e., Greek Theatre, Elizabethan Theatre, French Theatre, etc.).

Theatre Electives, at least 3 courses.

At least 3 additional courses in Theatre Art or in dramatic literature taught in other disciplines.

Related Fields, at least 3 courses.

3 or more courses from the following: music, fine arts, film, non-dramatic literature, philosophy or history.

In addition, every theatre history and dramatic literature student should acquire proficiency in at least one foreign language, preferably more.

Theatre Education Concentration

Insofar as possible, the Theatre Education Major should complete one of the previous concentrations. For purposes of breadth, however, he may choose to take courses in a variety of theatrical areas instead of concentrating primarily on a single one, and education may be considered as a related field.

The Theatre Art "Minor" or Double Major. Students who wish to design a program in Theatre Art which will serve as a minor program or part of a double major are welcome to do so under the direction of the Associate Chairman. Each program will be designed to meet the individual's specific need. While some may wish to develop a program independent of other concerns, others may wish to integrate their program with disciplines such as music, fine arts, film, English, modern languages and literatures, philosophy, etc.

All students who plan to major in Theatre Art or to take a significant portion of their program in Theatre Art should consult the Associate Chairman early in their careers, for many of the fundamental courses should be taken before the junior year.

COURSES

10. INTRODUCTION TO DRAMA.

A formal approach to dramatic analysis, this course will examine several types of plays from different periods in order to enable the student to understand and evaluate varied techniques of dramatic construction and theatrical presentation. No prerequisite.
Full course, Modules 1-2. Mr. Schroeder.

11. VOICE AND DICTION.

An intensive applied phonetic approach to articulation and voice production with some emphasis on speech for the stage. No prerequisite.
Full course, Modules 1-2. Mr. Schroeder.

12. ORAL INTERPRETATION. *Not offered, 1975-76.*

Techniques and practice in the oral interpretation of literature, with some emphasis on the drama and the integration of language with gesture and physical action. Prerequisite: Theatre Art 11.
Full course. Mr. Schroeder.

16. IMPROVISATIONAL ACTING. *Not offered, 1975-76.*

An exploration of the actor's resources through theatre games and improvisations. The process involved in creative imagination and spontaneity, and the interaction between body, emotion and speech will be stressed. Fundamentals of kinesics — body language, non-verbal communications and gesture — will be studied as an aid to the actor. No prerequisite.
Half course. Mr. Raviv.

17. BASIC PLAY PRODUCTION I.

The course is designed as a basic theatre workshop encompassing the areas of acting, directing and an understanding of the various elements of play production. Students will explore the actor's resources through theatre games and improvisations. The process involved in creative imagination and the interaction between body, emotion and speech will be stressed. Analysis of character and characterization and presentation of scenes will be required. Directing principles will be discussed and a small group of students will be encouraged to direct scenes with "acting" students. Students will be requested to see theatre productions and discussions will follow. There will be a final project at the end of the year. No prerequisite.
Full course, Modules 1-2. Mr. Raviv.

18. BASIC PLAY PRODUCTION II.

Continuation of Theatre Art 17. Prerequisite: Theatre Art 17.
Full course, Modules 3-4. Mr. Raviv.

88. DIRECTED READINGS.

A sequence of structured readings on a given topic approved and directly supervised by the instructor. Prerequisite: consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

89. SPECIAL PROJECTS.

Independent research on a particular problem or an original creative project directly supervised by the instructor. Prerequisite: consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

110. ACTOR'S WORKSHOP.

Designed as an intermediate course in the actor's training, Actor's Workshop will consist mainly of the study and presentation of scenes in a variety of modes and styles. Prerequisite: Theatre Art 18.
Full course, Modules 3-4. Mr. Raviv.

112. HISTORICAL STYLES OF ACTING.
Not offered, 1975-76.

A study of the problems confronted by the actor when performing in plays written in the past. Students will be expected to act in scenes from Greek and Elizabethan tragedy, classical and neo-classical comedy and plays

from other eras, and translate the essence of the style into meaningful modern terms. Prerequisite: Theatre Art 18.
Full course. Mr. Schroeder.

120. BASIC TECHNICAL THEATRE AND DESIGN I.

Fundamental problems of scene, costume and lighting design as they are related to the theatre technician will be considered along with intensive work in the technology of scene and costume construction and the application of lighting design. Laboratory in the form of specific working crew assignments. No prerequisite.
Full course, Modules 1-2. Ms. Allinson.

121. PRINCIPLES OF STAGE MANAGEMENT.
Not offered, 1975-76.

A course in the techniques of stage management and the problems of planning and running rehearsals and performances. Students will receive practical experience by serving on the working crews and in managerial positions on productions. No prerequisite.
Full course. Mr. Schroeder.

122. BASIC TECHNICAL THEATRE AND DESIGN II.

A continuation of Theatre Art 120, with added emphasis on problems of design. Prerequisite: Theatre Art 120.
Full course, Modules 3-4. Ms. Allinson.

151. THE GREEK THEATRE. *Not offered, 1975-76.*

A survey of the theatre of ancient Greece, including considerations of the origins of theatre, the form and substance of theatrical presentations and study of several representative plays. No prerequisite.
Half course. Mr. Schroeder.

153. THE MEDIEVAL THEATRE. *Not offered, 1975-76.*

The development of the theatre in Europe in the middle ages. The birth of modern drama in the Catholic Church: the trope, Mystery, Miracle and Morality plays. The organization and methods of production. Cycles and "passion" plays in the late middle-ages. The secular theatre. No prerequisite.
Half course. Mr. Raviv.

156. THE ENGLISH THEATRE—1660-1810.
Not offered, 1975-76.

A survey of the English theatre from 1660-1810, including study of theatre architecture, acting styles, scene and costume design, production methods, audiences and representative plays. Some emphasis on the history of Shakespearean production. No prerequisite.
Half course. Mr. Schroeder.

157. THE ENGLISH THEATRE—1810-1902.
Not offered, 1975-76.

A survey of the English theatre from 1810-1902, including study of theatre architecture, acting styles, scene and costume design, production methods, audiences and representative plays. Some emphasis on the history of Shakespearean production. No prerequisite.
Half course. Mr. Schroeder.

159. CONTEMPORARY POLITICAL THEATRE.
Not offered, 1975-76.

A study of the various forms in the contemporary theatrical scene devoted primarily to social and political issues of our time. Included in this study: "Guerilla Theatre", "Street", "The Living Theatre", "Bread and Puppet", etc. Plays, scenarios and group creations will be analyzed. Films will be shown for discussion. If possible, visits to actual performances will be arranged.
Half course. Mr. Raviv.

161. THE AMERICAN THEATRE TO 1920.

A survey of American theatre and drama from colonial times to 1920, including study of theatre architecture, scene and costume design, acting styles, production methods, audiences and representative plays. No prerequisite.
Full course, Modules 1-2. Mr. Schroeder.

162. THE AMERICAN THEATRE, 1920 TO THE PRESENT.

The course will highlight the major developments in the American theatre during the past fifty years. It will focus primarily on theatre organizations and on ensembles, prominent directors, dramatic forms, innovations in theatre architecture and leading stage designers. The decentralization of the theatre and the nature of B'way, off- and off-off B'way, "residence" and "regional theatre" as well as the political and experimental theatre of the 60s and 70s will be explored. No prerequisite.
Full course, Modules 3-4. Mr. Raviv.

164. THE AMERICAN MUSICAL THEATRE.

A survey of American musical comedy and other musical entertainments from *The Black Crook* to the present. After a brief study of musical theatre in nineteenth century America and of foreign and domestic influences on it, the course will concentrate on selected figures and works in twentieth-century musical comedy. No prerequisite.
Full course, Modules 3-4. Mr. Schroeder.

168. BRECHT AND THE EPIC THEATRE.
Not offered, 1975-76.

The tradition of "epic" theatre productions. The political theatre of Piscator. Brecht's major plays and his theories concerning epic theatre. The productions of his own plays at the Berliner Ensemble. No prerequisite.
Half course. Mr. Raviv.

170. INTRODUCTION TO PLAYWRITING.

A study of the problems of plot construction, characterization, dialogue writing and theatricalization. Students will be expected to produce written assignments which demonstrate the various problems of playwriting. In addition, students will be asked to write at least one complete one-act play or portions of a longer play or, in substitution, a detailed analytical project. Admission to

the course is by permission of the instructor; to obtain permission, the student will be asked to demonstrate a familiarity with several types of dramatic literature, and, if possible, he should have taken Theatre Art 10.
Full course, Modules 3-4. Mr. Schroeder.

181. EUGENE O'NEILL. *Not offered, 1975-76.*

An intensive study of Eugene O'Neill, concentrating on his development as a theatre artist. Evaluation of his contribution to drama through reading and analysis of his major plays. No prerequisite.
Half course. Mr. Schroeder.

182. MODERN DRAMA: DEPARTURES FROM REALISM.

Not offered, 1975-76.

An in-depth study of 15 to 20 European and American plays representing the most important departures from the realistic formula of playwriting which developed towards the end of the nineteenth century. The theory and techniques of Expressionism, Surrealism, Epic Theatre, Theatre of the Grotesque and Theatre of the Absurd, among others, will be analyzed against the background of general developments in theatrical production. The readings will include some important introductions and essays concerning the dramatic forms. No prerequisite.
Full course. Mr. Raviv.

183. THE THEATRE AS A VEHICLE FOR PROTEST AND PROPAGANDA IN TIMES OF SOCIAL CHANGE.

Not offered, 1975-76.

After a brief historical introduction tracing protest and propaganda in the theatre from Aristophanes to Brecht, such examples as Social Realism, the Living Newspaper, Epic Theatre, the Federal Theatre, Guerilla and Street Theatre and the Negro Ensemble will be studied through plays and new modes of theatrical expression. No prerequisite.
Full course. Mr. Raviv.

184. THE GOLDEN AGE OF THE YIDDISH THEATRE.

Not offered, 1975-76.

A study of how the Yiddish theatre was born in eastern Europe in the second half of the nineteenth century and its fast maturity until the nineteen-twenties. The drama of Goldfaden, Gordin, Hirshbein and Pinsky. The rise and maturity of the American Yiddish theatre. No prerequisite.
Half course. Mr. Raviv.

185. TENNESSEE WILLIAMS.

An intensive study of Tennessee Williams, concentrating on his development as an artist. Evaluation of his contribution to drama and literature through reading and analysis of his works. No prerequisite, but some experience in drama and literature is expected.
Full course, Module 5. Mr. Schroeder.

199. HOLY CROSS COURSES.

All Theatre Art courses taken at Holy Cross are number 199. Content is differentiated by title only. During each registration period, the student should consult the list of courses available in the Theatre Art Office.

204. ADVANCED TUTORIAL IN ACTING I.

Special study and coaching in acting problems for experienced actors only. Prerequisite: Theatre Art 110 or 112, at least two courses in drama or theatre history and consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

205. ADVANCED TUTORIAL IN ACTING II.

Continuation of Theatre Art 204. Prerequisite: Theatre Art 204 and consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

206. ADVANCED TUTORIAL IN ACTING III.

Continuation of Theatre Art 205. Prerequisite: Theatre Art 205 and consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

207. ADVANCED TUTORIAL IN ACTING IV.

Continuation of Theatre Art 206. Prerequisite: Theatre Art 206 and consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

242. ADVANCED TUTORIAL IN DIRECTING I.

Special study and coaching in problems of directing for experienced directors only. Prerequisite: Theatre Art 18, at least two courses in drama or theatre history and consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

243. ADVANCED TUTORIAL IN DIRECTING II.

Continuation of Theatre Art 242. Prerequisite: Theatre Art 242 and consent of instructor.
Variable credit.
Modules 1-2-3-4-5. Staff.

251. THE ELIZABETHAN THEATRE. *Not offered, 1975-76.*

An examination of the important documents — visual and literary — pertaining to the theatre during the Elizabethan era. The study will include all aspects of theatre production: the playhouse, actors, scenery, costumes and audience. An attempt will be made to reconstruct some actual productions of Elizabethan plays as they might have been produced during the time. Prerequisite: at least two courses in drama and/or theatre history.
Full course. Mr. Raviv.

281. SEMINAR: SPECIAL STUDIES IN RENAISSANCE DRAMA. *Not offered, 1975-76.*

A seminar devoted to the intensive study of a small group of dramatists of a special dramatic problem of the Renaissance. Independent study and research is emphasized. Prerequisite: consent of instructor.
Full course. Mr. Schroeder.

286. SEMINAR: IBSEN.

An intensive study of the major plays of Ibsen and criticism of his life and work. Consideration will be given to his development as an artist. Independent research and study is emphasized. Prerequisite: consent of instructor.
Full course, Modules 3-4. Mr. Schroeder.

290. CREATIVE DRAMATICS IN EDUCATION.

The technique and use of creative dramatics in the classroom. Appeal to the imagination and creativity, development of observation and the insight into characters and situations. Pantomime, improvisation and dramatization of poems, stories and themes. No prerequisite.
Full course, Modules 1-2. Mr. Raviv.

Faculty

Members of the faculty and officers for 1975-76 are listed alphabetically with their titles, degrees and years at Clark University. Persons no longer on the faculty, but who served only during the previous year are included also.

PRESIDENT

MORTIMER H. APPLEY, Ph.D., President, and Professor of Psychology. B.S., The City College, New York, 1942; M.A., University of Denver, 1946; Ph.D., University of Michigan, 1950. (1974-)

EMERITI

HOWARD B. JEFFERSON, Ph.D., LL.D., L.H.D., Litt. D., President, Emeritus. A.B., Denison University, 1923; Ph.D., Yale University, 1929; LL.D., Denison University, 1948, Hillsdale College, 1952, Northwestern University, 1958; L.H.D., Colgate University, 1951, Assumption College, 1956; Litt. D., College of the Holy Cross, 1962; L.H.D., Clark University, 1967; LL.D., Emerson College, 1968. (1946-67)

KARL J.R. ARNDT, Ph.D., Professor of German, Emeritus. (1950-1974)

CLAUDE W. BARLOW, Ph.D., Professor of Classics, Emeritus. (1947-72)

LYDIA P. COLBY, B.S., Registrar, Emeritus. (1932-66)

JESSIE C. CUNNINGHAM, Ph.D., Associate Professor of English, Emeritus. (1957-1975)

TAMARA DEMBO, Ph.D., Professor of Psychology, Emeritus. (1953-1972)

GEORGE E. HARGEST, M.B.A., Associate Professor of Economics, Emeritus. (1942-1971)

SHERMAN S. HAYDEN, Ph.D., Professor of International Relations, Emeritus. (1946-1973)

VERNON JONES, Ph.D., Professor of Educational Psychology, Emeritus. (1926-1968)

FREDERICK W. KILLIAN, LL.B., Associate Professor of Sociology, Emeritus. (1947-1970)

DWIGHT E. LEE, Ph.D., L.H.D., Jacob and Frances Hiatt Professor of European History, Dean of the Graduate School, Emeritus. (1927-1967)

JAMES A. MAXWELL, Ph.D., L.H.D., Professor of Economics, Emeritus. (1924-1967)

RAYMOND E. MURPHY, Ph.D., Professor of Economic Geography, Emeritus. (1946-1968)

THEODORE NICOL, Ph.D., Associate Professor of Romance Languages, Emeritus. (1946-1969)

PERCY M. ROOPE, Ph.D., Professor of Physics, Emeritus. (1921-1962)

SAMUEL VAN VALKENBURG, Ph.D., LL.D., Professor of Geography, Emeritus. (1927-1929, 1932-1962)

HENRY J. WARMAN, Ph.D., Professor of Geography, Emeritus. (1943-1974)

FACULTY AND OFFICERS OF INSTRUCTION

DAVID ABRAHAM, Ph.D., Assistant Professor of English. B.A., Brooklyn College, 1966; M.A., University of Massachusetts, 1968; Ph.D., 1973. (1973-)

VERNON AHMADJIAN, Ph.D., Professor of Botany. A.B., Clark University, 1952; A.M., 1956; Ph.D., Harvard University, 1960. (1959-1968, 1969-)

HARRY C. ALLEN, JR., Ph.D., Professor of Chemistry, Chemistry Department Chairman. B.S., Brown University, 1949; Ph.D., University of Washington, 1951. (1969-)

DONNA ALLINSON, M.A., Lecturer in Theatre Art. B.A., Central Connecticut State College, 1967; M.A., 1970. (1975-)

ROY S. ANDERSEN, Ph.D., Professor of Physics. A.B., Clark University, 1943; A.M., Dartmouth College, 1948; Ph.D., Duke University, 1951. (1960-)

ALBERT A. ANDERSON, Ph.D., Associate Professor of Philosophy. B.A., Morningside College, 1960; M.A., Boston University, 1963; Ph.D., 1971. (1973-)

KARL O.E. ANDERSON, Ph.D., Professor of English. A.B., Harvard University, 1927; A.M., 1928; Ph.D., 1942. (1945-)

MORTIMER H. APPLEY, Ph.D., President and Professor of Psychology. B.S., The City College, New York, 1942; M.A., University of Denver, 1946; Ph.D., University of Michigan, 1950. (1974-)

LAWRENCE J. BADER, Ph.D., Assistant Professor of Education (Affiliate). B.A., City University, N.Y.C., 1959; M.A., 1962; Ph.D., Boston University, 1970. (1973-)

ROBERT W. BAKER, Ph.D., Professor of Psychology; Director, Psychological Services Center. A.B., Hobart College, 1947; Ph.D., Clark University, 1953. (1954-)

RAYMOND E. BARBERA, Ph.D., Professor of Romance Languages. A.B., Brooklyn College, 1947; A.M., University of Arizona, 1948; Doctor en Letras, Universidad Nacional de Mexico, 1949; Ph.D., University of Wisconsin, 1958. (1953-)

PETER M. BARNETT, Ph.D., Assistant Professor of Art History. B.A., Amherst College, 1963; M.A., Harvard University, 1965; Ph.D., 1972. (1970-)

TILTON M. BARRON, B.L.S., Librarian. A.B., Colorado College, 1937; B.L.S., Columbia University School Library Service, 1940. (1954-)

THOMAS C. BARROW, Ph.D., Professor of American History (Affiliate). B.A., Harvard University, 1952; M.A., 1954; Ph.D., 1961. (1967-)

JAMES F. BEARD, JR., Ph.D., Professor of English. A.B., Columbia College, 1940; A.M., Columbia University, 1941; Ph.D., Princeton University, 1949. (1955-)

ROBERT N. BECK, Ph.D., Professor of Philosophy; Philosophy Department Chairman. A.B., Clark University, 1947; A.M., Boston University, 1948; Ph.D., 1950. (1948-1967; 1968-)

VICTOR A. BECKER, M.F.A., Instructor in Theatre Art (Affiliate). A.B., University of Rochester, 1969; M.F.A., Brandeis University, 1971. (1972-)

D. FRANK BENSON, M.D., Professor of Psychology (Affiliate). B.A., University of North Dakota, 1950; B.S. (In Medicine), University of North Dakota, 1951; M.D., Northwestern University, 1953. (1974-)

LEONARD BERRY, Ph.D., Professor of Geography; Co-Director of International Development Program; Dean of the Graduate School; Coordinator of Research. B.Sc., University of Bristol, 1951; M.Sc., 1956; Ph.D., 1969. (1969-)

ROGER BIBACE, Ph.D., Professor of Psychology; Director, Clinical Training Program. A.B., University of British Columbia, 1949; Ph.D., Clark University, 1957. (1957-)

GEORGE A. BILLIAS, Ph.D., Professor of American History. A.B., Bates College, 1948; A.M., Columbia University, 1949; Ph.D., 1958. (1962-)

CHARLES S. BLINDERMAN, Ph.D., Professor of English. A.B., New York University, 1952; A.M., 1953; Ph.D., Indiana University, 1957. (1962-)

JOHN BLYDENBURGH, Ph.D., Professor of Government and International Relations; Government and International Relations Chairman. B.A., Harpur College, State University of New York at Binghampton, 1965; Ph.D., University of Rochester, 1969. (1975-)

DANIEL R. BORG, Ph.D., Associate Professor of European History. A.B., Gustavus Adolphus College, 1953; A.M., Yale University, 1957; Ph.D., 1963. (1961-)

MARTYN J. BOWDEN, Ph.D., Associate Professor of Geography. B.A., London University, 1957; M.A., University of Nebraska, 1959; Ph.D., University of California, Berkeley, 1967. (1964-)

DAEG S. BRENNER, Ph.D., Associate Professor of Chemistry. B.A., Rensselaer Polytechnic Institute, 1960; Ph.D., Massachusetts Institute of Technology, 1964. (1967-)

JOHN J. BRINK, Ph.D., Professor of Biochemistry. B.Sc., University of Orange Free State, 1955; B.Sc., (Hons.), University of Witwatersrand, 1956; Ph.D., University of Vermont, 1962. (1966-)

DONALD M. BROVERMAN, Ph.D., Professor of Psychology (Affiliate). A.B., Union College, 1952; M.A., Clark University, 1956; Ph.D., 1958. (1964-)

CHARLES BURACK, M.Ed., Liaison and Clinical Instructor in Education. B.S., Worcester State College, 1951; M.Ed., 1952. (1972-)

IAN BURTON, Ph.D., Professor of Geography (Affiliate). B.A., University of Chicago, 1951; Ph.D., University of Chicago, 1962. (1972-)

ANNE BUTTIMER, SISTER MARY ANNETTE, O.P., Ph.D., Associate Professor of Geography. B.A., National University of Ireland, 1957; M.A., 1959; Ph.D., University of Washington, 1965. (1971-)

NELSON M. BUTTERS, Ph.D., Associate Professor in Psychology (Affiliate). A.B., Boston University, 1960; M.A., Clark University, 1962; Ph.D., 1964. (1971-)

GEORGE CAMOUGIS, Ph.D., Professor of Physiology (Affiliate). B.S., Tufts College, 1952; A.M., Harvard University, 1957; Ph.D., 1958. (1958-)

ROBERT F. CAMPBELL, Ph.D., Professor of American History; History Department Chairman. A.B., Yale University, 1939; A.M., Columbia University, 1940; Ph.D., 1947. (1946-1957, 1960-)

THOMAS G. CARROLL, M.A., Assistant Professor of Education and Anthropology. B.A., SUNY of Buffalo, 1967; M.A., 1973. (1975-)

WILLIAM H. CARTER, JR., Ph.D., Professor of English; English Department Chairman. A.B., Middlebury College, 1936; A.M., Harvard University, 1938; Ph.D., 1951. (1949-)

GERALD R. CASTONGUAY, Ph.D., Assistant Professor of Music. B.Mus., Boston University, 1959; M.Mu., Hartt College of Music, 1963; M.A., Harvard University, 1965; Ph.D., Rutgers University, 1975. (1970-)

LAIRD S. CERMAK, Ph.D., Assistant Professor of Psychology (Affiliate). B.A., Ohio Wesleyan University, 1964; M.A., Ohio State University, 1965; Ph.D., 1968. (1973-)

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Academic Calendar 1975-1976

FALL SEMESTER: MODULES I AND II

Monday, September 1 Labor Day
Tuesday, September 2
Arrival of new students for orientation.
Wednesday, September 3 and Thursday, September 4
Orientation and Registration for new students.
Thursday, September 4
Registration for continuing and readmitted undergraduate and graduate students.
Friday, September 5
First day of classes.
Monday, September 22 — Tuesday, September 23
Final registration for all students.
Monday, October 6
Last day to submit applications to the Registrar for degrees which will be awarded on Wednesday, January 7.
Wednesday, October 22
Last day of classes for Module 1-1. Module 1 exams will be given in class on Monday-Wednesday, October 20th-22nd.
Thursday, October 23
First day of vacation.
Monday, October 27
Classes resume for Module 1-2. Registration and first class day for Module 2-2.
Monday, November 17
Advance registration for Module 3-4.
Thursday, November 27
Thanksgiving vacation.
Monday, December 1
Classes resume.
Monday, December 15
Last day of classes for Modules 1-2 and 2-2. This will be considered a Thursday class day.
Tuesday, December 16
Reading day.
Wednesday, December 17 — Saturday, December 20
Fall Examinations.
Saturday, December 20
Christmas vacation begins after last exam.

SPRING SEMESTER: MODULES III AND IV

Wednesday, January 7
Commencement (for students completing degree requirements in Modules 1 and 2).
Friday, January 9
Orientation for new students.
Monday, January 12
Registration for all students.
Tuesday, January 13
First day of classes.
Monday, January 26 - Tuesday, January 27
Final registration for all students.
Monday, February 23
Last day to submit applications to the Registrar for degrees which will be awarded on Commencement Day, May 9, 1976.
Friday, February 27
Spring vacation starts after the last class. Module 3 exams will be given in class the week of February 23-February 27.
Monday, March 8
Classes resume for Modules 3-4. Registration and first class day for Module 4-4.
Monday, March 15
Advance registration for Module 5.
Monday, April 12
Theses and dissertations due for May candidates for advanced degrees.
Thursday, April 22
Last day of classes for Modules 3-4 and 4-4.
Friday, April 23
Reading Day.
Saturday, April 24 - Wednesday, April 28
Spring examinations.
Sunday, May 9
Commencement.

MODULE V

Monday, May 10
Registration and first day of classes.
Monday, May 24
Memorial Day holiday.
Thursday, June 24
Last day of classes.
Friday, June 25 - Saturday, June 26
Exams for Module 5-5.

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